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APRIL, 1923.

MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY.

EDITED BY

G. E. MOORE,

WITH THE CO-OPERATION OF PROFESSOR PRINGLE-PATTISON, PROFESSOR C. D. BROAD, AND F. C. BARTLETT, M.A.

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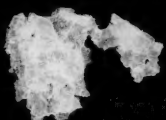
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MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY

I.—TIME AND REALITY.¹

BY W. R. SORLEY.

THE Extremes which Mr. Bosanquet has in view in his book on *The Meeting of Extremes in Contemporary Philosophy* are represented by the Italian neo-idealists and the English and American neo-realists. "On the one side thought, self-creative and all-producing, the ultimate principle and even the ultimate type and form of reality; on the other, a self-existent universe, actual in space and time, in which mind—that is, distinct individual minds—holds a place on equal terms with other finite things." It seems clear enough that these are extremes, and yet they meet. The idealists have been impressed by the significance of history, just as the realists are impressed by the facts of biological and cosmical evolution; and so "in both alike, such is the spirit of the age, we have the actual and ultimate reality of Time, progress to infinity, as the fundamental character of the real".² In Mr. Bosanquet's view, therefore, the meeting-place of the extremes is simply a common error—the assertion or assumption of the reality of time. And the purpose of the author is not to act as herald of a new agreement in philosophical opinion, but to stand once more at the parting of the ways and to try and divert the traffic, or as much of it as possible, from the wrong road into the right. From this point many paths diverge; but I am inclined to agree with Mr. Bosanquet that it is here—in the question as to the status of time in reality—that we can most clearly see "the conflict of principle

¹ This article deals, almost exclusively, with Mr. Bosanquet's views on Time; and, when it was written, it was hoped that his last word on the subject had not yet been said. The article had been in the printer's hands many weeks before the sad and unexpected news arrived of Mr. Bosanquet's death. It is allowed to appear now owing to the importance which belongs to every topic which his genius touched.

² *Meeting of Extremes* (afterwards cited as *M.E.*), viii.

which most profoundly divides the thinking world to-day"¹ (p. 200). This, as he says, is "the fundamental crux of philosophy".² It is a conflict not merely between idealist and realist but between idealist and idealist, and the convinced realist may perhaps regard it with some impatience. But for others some reflexions upon it may not be without interest. In what I have to say I shall keep Mr. Bosanquet's exposition pretty closely in view.

He holds that time—whether regarded in the mere succession of event to event, or in the tendency which life shows towards a purpose or end as yet unfulfilled, or in the process by which values are realised in the moral life—is in every case misleading as an indication of reality. Time enters into our experience, of course, but it masks the reality which experience reveals. Succession, purpose, morality are all shaped by time, and if we interpret the universe by them we misinterpret it. The universe is one though it has diverse finite appearances; it is complete, though the things in it seek their ends by selecting one path rather than another; it is perfect, though finite minds distinguish factors in it as good and evil. Even the finite intelligence is conscious of the unity, completeness, and perfection of the universe. This consciousness he possesses in religion by faith, and in speculation it is vindicated by philosophy. But the consciousness is lost or discredited if we hold with the neo-idealists and neo-realists to the reality of time, and accordingly look upon the whole of things as in process, seeking an end, striving towards a perfection which it lacks at the present moment.

In adopting this attitude, Mr. Bosanquet deals with old puzzles; but there is some degree of novelty in taking this question of Time as crucial and seeing how it affects other fundamental problems. The question may be discussed as it appears on different levels of experience—the levels of Order, Life, Morality, and Religion. This is not exactly Mr. Bosanquet's method, though he refers to each of these levels in one place or another; but it is a method which may lead on to an appreciation of the significance of time in reality as a whole.

1. The Order of Succession.

It is necessary to remind ourselves that Time is never experienced by itself, but only as a factor in the flow of experience or succession of events. And when we proceed to measure time we always measure it by something else—

¹ *M.E.*, 200.

² *M.E.*, 217.

nearly always by the movement of something in space. Thus we have clock-time, sun-time, and finally the velocity of light. They are all approximations to an exact measure; each is valid within limits and for a limited purpose. Yet we know that clock-time will change with the wear of the machine, and that sun-time will vary if the earth's revolution on its axis is being slowly retarded; and we only accept the velocity of light as a constant because of the trouble it would cause to men of science if it weren't. Our measures are therefore only approximately exact. Yet without measures we cannot compare two periods of time in respect of their temporal character, and, apart from such power of comparison, there must be a lack of precision in our conception of time. A period of time such as a minute, an hour, a day, cannot be defined without reference to movement in space, and the definition is subject to any imperfections and assumptions in our measurements of space. It is conceivable, indeed, that we might attempt another method which would rely on number but not on space. The time occupied by a speech or in playing a tune might be estimated by the number of syllables or notes heard; this method would give very different results from that by spatial measurement; and it would also disregard entirely the differences in the perception according as the sounds follow one another (as we put it) with greater or less rapidity. The purely subjective apprehension of rapidity, on the other hand, does not lend itself to precise or quantitative expression.

Suppose that all rates of movement were doubled. The earth would revolve twice as fast; it would complete its orbit in what we now call half a year; all organic processes would be quickened in the same degree from the movement of sap in the tree to the movement of neural substance in the brain; the velocity of light also would be doubled. What perceptible change would this make? Everything would go on just as before: though twice as quickly from the point of view of an outside observer. But there would be no outside observer—no possible means of measuring or even noting the change. For thought too, if it is connected with neural change, would proceed twice as quickly. There might be some subjective change—a quickened sense of life: though even this is doubtful. But at any rate it would not be capable in any degree of quantitative measurement.

All these considerations show that we do not possess a conception of time which can claim to be absolute or final. But the same might be said of our conceptions of self or of God or of the universe. These may be real, even ultimately

real, though our conceptions of all of them are only approximately correct. And so with time; it may be real, in spite of the imperfect manner of our conception of it.

Further: in all cases our conceptions of time are based on more immediate experience—the perception as distinguished from the conception of time. Now the time-perception, when we reflect upon it, is seen to be without the abstractness and the homogeneity which our thinking confers upon the conception of time. It is always filled time, a concrete experience; and it is not composed of equal moments. This time-perception has two characteristics: first, the indefinable characteristic of successiveness: that the experience consists of parts one-after-another; and secondly, another characteristic which at first sight seems to contradict the former—that of permanence. Were this permanence absent, there might be succession for the external observer, but there would be no experience of succession on the part of the experient. The perception of after-another-ness is possible only within a continuous experience in which present is not sundered from past, though it may be distinguished from it.

Past, present and future are connected in a different way in immediate experience from that in which they are connected in the conception of time. In the latter, time is divested of all its contents, and there is no obstacle to its infinite divisibility. The present is an infinitesimal moment bounded by a past which is entirely gone and a future which is altogether not yet. But neither the distinctness of the moments of time nor their minuteness is a feature of the time-perception. Time as experienced is always a stretch of time—something that may be analysed conceptually into moments, but is not itself either one moment or several: the past lingers in the present and the present is always passing into the future.

A certain permanence thus belongs to our experience even in respect of this its fleeting and transient character. And this permanence characterises the objects as well as the subject of the experience. It is an enduring something that we perceive. We never perceive bare time: that is purely conceptual, and it is only by an effort that we concentrate our attention on the succession in time to the comparative exclusion of the content which is successive.

Change, therefore, rather than time is what immediately concerns us. It is a less abstract concept, nearer immediate experience, than time. And for change there must be something that changes. Complete discontinuity is something which experience only approaches and that rarely. Were it

to reach it—were one portion of experience entirely cut off from the preceding—the discontinuity itself would not be apprehended. The changes which we experience are always within an objective continuum. They are within something which persists: the changes are the modes in which it persists.

Mr. Bosanquet says that changes are not *of* but *within* reality.¹ But surely that which is within reality must itself be real. Or are we to define reality as that which contains the unreal? When Mr. Bosanquet urges that reality and change are incompatible he seems to put forward an Eleatic view of change which would make it equally inapplicable to finite things, and he leaves the changing finite and the unchanging infinite without that point of contact which his and every philosophy require. The view that, in changing, a thing "must be first one thing and then another. It must cease to be what it was, and become what it was not"² makes life and history—indeed, all existence—unintelligible.

"The world," he says, "is a unity of movements, but not a single movement."³ It is not "first one thing and then another". But neither is the finite thing in its history. The flower changes as it opens to the sun; the clock changes between nine and ten; and yet flower and clock remain the same. The change is *within* each and also *of* each—but not of either into something else. In his meaning of change (discontinuity, substitution of one thing for another) there is no change of the flower or the clock; and yet each has a history. The world which we know changed in August 1914, and yet it was the same world before and after. It is its nature to be a history. The changes were within it and did not prevent it from continuing the same world as before the deluge. It did not become something else, such as Mars or Saturn. It was not "in its entire and fundamental being, engaged in a passage and departure from one type or determination of being to another which succeeds the former and excludes it".⁴ And this is the way in which change is described when it is denied of the universe.

"Starting from the common ground that the universe is full of change and movement, we have staring us in the face the problem whether it can be described as, taken altogether, a movement or engaged in a movement."⁵ This is how Mr. Bosanquet states the problem, and we can imagine how it presented itself to him in this way. The earth, or rather the

¹ *M.E.*, 118.⁴ *M.E.*, 181.² *M.E.*, 158.⁵ *Loc. cit.*³ *M.E.*, 151.

whole solar system, is full of change and movement. These changes we can observe, and our lives are a part of them. But, in addition, we are able to assert that the whole system is engaged in a movement which may conceivably open out new avenues of experience or lead to a dramatic finale of the earth's history. Can we conceive any similar movement on the part of the universe? If we mean by 'universe' what Mr. Bosanquet means, the answer cannot be in doubt. "Taken altogether," it cannot change or be engaged in a movement. New possibilities cannot be opened up, for "possibility is within the real," reality is not within the possible.¹ Time, also, is within the real—a feature of the universe, not something independent of the universe and determining it. To imagine the universe as something in time, as the solar system is in space, would be absurd: for it would then be possible to conceive something greater than the universe, namely, the universe *plus* time. This latter then is what we ought to mean when we speak of the universe; and to say that it is in time would be absurd, for it would be equivalent to saying that time is in time.

But this argument is unable to prove that the universe is not itself historical. Mr. Bosanquet would say it has not itself a history but that it contains all histories. And this is right. The universe cannot be something that has *a* history, for the universe is the All-throughout-all-time, and therefore cannot progress to another point of time, for that would be to progress out of itself into something outside the universe. Just as the spatial universe, because it includes all space, cannot move from one part of space to another, so the temporal universe, regarded as including all time, cannot move from one period of time to another. Space is not in space, nor is time in time. But the universe may have a spatial character, and it may have a temporal character. I am not proving that it has—only pointing out that Mr. Bosanquet has not proved that it has not.

I have spoken of the universe as meaning the All-throughout-all-time. If this conception is legitimate it will also be legitimate to form a conception of a minor totality—a totality in all respects the same as the Universe except the temporal. This will be the conception of the All-at-some-moment-of-time, or the All-throughout-a-given-period-of-time. It is of this minor totality, or of minor totalities of the same kind viewed in succession, that people are thinking when they speak of the universe as having a history or being in time.

¹ *M.E.*, 180.

The expression is-inexact, for the whole, the universe, includes time and is not included in it. The minor totality differs from the universe in being included in time instead of containing it; but the completed series of these minor totalities (whether the series itself be held to be finite or infinite) is the universe.

No doubt Mr. Bosanquet might deny the validity of the conception of the All-at-a-moment or for-a-period-of-time. He might say that leaving out the 'all time' from the conception of the universe modifies it in a fundamental way. With this I should agree, and I would add that we need a theory of this fundamental modification, which I am not prepared to attempt here. But this does not make the conception invalid, unless we hold that time is not a feature of the All or (what comes to the same thing) that it is appearance, not reality. And this alternative separates Reality from the finite in a way which will be better appreciated after some other points of detail have been examined.

2. Life.

Mr. Bosanquet, who would never think of describing reality as a succession, nevertheless describes it as a 'life'—"the living source" of the whole series which is laid bare to finite spirits.¹ It is "a living and seething entirety"² which expands in all directions.³ At the same time, it is not purposive, and it has no history. "A being that has a purpose, a career, an alteration in time, is a different sort of being from the universe."⁴

In what sense then can the 'source' of life be described as itself 'living'? How are we to construe that life from which the time-factor is absent? It is difficult to gather any kind of answer to this question from the writings of Mr. Bosanquet. The universe or ultimate reality is spoken of as spirit and as experience—even as 'seething' and 'expanding'. There is neither 'before' nor 'after' in the experience, and yet, on the other hand, the idea of a *totum simul* is definitely discarded.⁵ What the 'seething' and 'expanding' mean as applied to the finite contents (or appearances) of reality I can understand; but their application to the universe or ultimate reality (in Mr. Bosanquet's sense) is more doubtful. Language which was framed by men for their limited purposes perhaps naturally fails to express the nature of a 'life' which is neither limited nor purposive.

¹ *M.E.*, 183, 216.

² *M.E.*, 179.

³ *M.E.*, 183.

⁴ *M.E.*, 180; *cp. Principle of Individuality and Value*, 393.

⁵ *M.E.*, 179.

The negative side of Mr. Bosanquet's view of the 'living Absolute' is best brought out by his criticism of teleology. Teleology, he thinks, "loses its distinctive meaning as we deepen its philosophical interpretation"¹; and there are said to be two features of teleology which make it unfit to describe reality. It is temporal—a process which realises its true nature in the course of time; and it is selective, picking and choosing within the environing possibilities as they happen to be adapted to the destined end. "No such ascription of ultimate value to a particular class of creatures nor to a particular moment of time can be justified as an ultimate conception."²

It should be observed that the criticism of teleology contained in Mr. Bosanquet's books is not directed solely against the view that attributes purposiveness to the universe as a whole. He is, in general, also critical of its applications within the realm of finite beings and tends to favour mechanical explanations: in this respect, as in many others, re-acting from Hegel and going back to Spinoza.

I agree, however, that the characteristics referred to are consequential rather than fundamental in the conception of teleology. Its fundamental characteristics are, I think, value and consciousness. Perhaps one should even say value alone: for consciousness is not *prima facie* present in many organic and other processes which are undoubtedly teleological. But I include consciousness because it seems to me that the conception of unconscious purpose is not ultimately intelligible, and because, in the individual life, the presence and potency of consciousness always seem to raise value to a higher level. This, however, is by the way, and I do not argue the point here or depend upon it in the sequel. Let us admit then that selection and temporal succession are subsidiary features: does it follow that we may set them aside as unessential?

Always when we speak of teleology, we use the conception to describe life or movement. And Mr. Bosanquet allows of our speaking of the universe as a life—a living unity. If we deny that selection has any place in this life-process, we must assume that all details and all directions have equal value. And this is what Mr. Bosanquet seems to do. Referring to the universe as a whole, he says we must conceive it "as a unity which in its infinite life, without narrowing itself to a single line of advance selected from among all the characters of which its life is capable, rather reveals itself through

¹ *Principle*, 123.

² *Ibid.*, 124, 126.

infinitely diversified resources as in all directions an inexhaustible fountain of values".¹ And, as regards finite beings, he denies that "ultimate value" can belong to any particular class of creatures—at least as an "ultimate conception".² It is difficult to see what is meant by the "ultimates" in the latter statement. If any one were to assert that the values realised by a particular creature or class of creatures, or at any particular moment—were it the culminating moment of the world's history—were any one to assert that such values were ultimate in the sense of being incapable of increase by combination and systematisation with other values realised by other creatures or at other moments, then not only would his conception be incapable of justification as an "ultimate conception," it would be incapable of any justification. Only in the universe as a whole can we expect to find "ultimate value" realised. On the other hand many particular creatures do realise intrinsic values; they even realise them at particular moments. And these intrinsic values may be and are essential in the constitution of that ultimate value which is only realised in the universe which includes all time and all particular creatures within it. Ultimate value is not something to be ascribed to the future alone, or to one or a few highly favoured beings: it belongs to the whole in which the process of finite lives is essential. If "ultimate" in the passage quoted means ultimate, the statement is obviously true, but hardly relevant or important; if it only means intrinsic, then the statement is incorrect.

The universe as Mr. Bosanquet conceives it is not a mere unity without difference; it is a marvellous diversity expressing a single nature. But is this diversity in unity perfect in every detail, as Mr. Bradley holds? If it is, then there is neither good nor evil, no degrees of fitness, and no place for selection on the part of finite beings. In this case the consciousness of these differences which seems to sway finite minds must be illusory; and this very illusion shows imperfection in an important detail. If we would avoid this contradiction, the variety must be admitted to as unequivocal a status in reality as the unity; and it will follow that life has to find the best way in this variety and must therefore proceed by selection.

But it is with time, not with selection, that we are chiefly concerned; and the time-process equally with the selective process is implied in teleology. For in teleology the end is not present in the beginning, or is present only in the

¹ *M.E.*, 183.

² *Principle*, 126.

incomplete form of an idea in the agent's mind; it can come to completion, or be realised, only by mediation of the environment and by the stages of a temporal process.

"The great enemy of all sane idealism," says Mr. Bosanquet, "is the notion that the ideal belongs to the future."¹ There is truth in this statement if the notion declared to be the enemy is that the ideal belongs to the future alone and is the future's concern. It is a notion hostile to all morality as well as to sane idealism. But it is equally true that there would be no call or room for idealism if the ideal were already actualised; there would not even be room for activity. The essence of idealism in morals is that the ideal, although it "belongs" to the present in the sense of being valid for it, is not yet in actual existence, so that the present does not realise the ideal which "belongs" to it; that the ideal must be sought; that the activity which seeks it involves a process in time; and that its complete realisation has to wait upon the future. The significance of time consists in its being the mode in which ideals are realised.

Mr. Bosanquet's utterance seems to be intended as a criticism of finite will as well as of the infinite Whole; but it may be maintained that, at any rate, it applies to the latter—that the universe is at once perfect and actual and that here teleology is out of place. To this my reply must be as before. The universe is perfect if by 'universe' you mean the entirety which includes all time: to such a conception, taken strictly, teleology cannot apply, for all time and all perfection are contained in it: movement and progress cannot be ascribed to it without contradiction: value and consciousness may remain but not the subsidiary characteristics of time and selection. But this universe is not actual, that is, realised at present. Including all time, it cannot exist at this moment or at any other moment. But we may, as I have said, form the conception of a minor totality, identical with the universe in all respects, except that it does not include all time but exists at the moment or for a finite stretch of time. This we may call the actual universe. It is not perfect and it is a process. It is a unity containing diversity, an identity which undergoes continuous change, not by accretion from without (that would be impossible) but by progressive organisation and new arrangement of its contents: and this active process calls for selection, so that teleology is not excluded.

Surely the philosopher should admit that he at least is living in time, that all the objects of his experience—the

¹ *Principle*, 136.

flower, the river, the everlasting hills, the whole realm of living and conscious beings—are in a course of development whose actual stage is not the whole; and that, even when his consciousness grasps the all-time-containing Absolute, the conscious process by which he grasps it is itself in time. If it is true that “a careful analysis of a single day’s life of any fairly typical human being would establish triumphantly all that is needed in principle for the affirmation of the Absolute,”¹ then surely the “glimpses” thus obtained of the Absolute and its value² give form and purpose to the daily life in its pursuit of human ends and values.

3. Morality and Religion.

It is hardly too much to say that, for Mr. Bosanquet’s speculative view, Moralism (as he calls it) is the enemy. There seem to be three reasons for this: (1) The moral world stresses the differences between person and person, whether these be due to status or to previous agreements. It is a world of claims and counter-claims, or of what ordinary people call rights and duties, by which one man is set over against others, and all are occupied in studying their ledgers of profit and loss and seeing that claims are duly honoured. The moral world seems to be pictured as a vast counting-house, with the usual adjunct of a police-court. (2) The moral view exaggerates man’s importance in the universe and tends to humanitarianism. And (3) the deeds or volitions which it requires are all in time. It gives significance to history, bids a man enter actively into the world’s course and try to make the future better than the present, thus proving itself the “enemy of all sane idealism”.

In the main I do not deny the correctness of Mr. Bosanquet’s account of morality. But it seems to me fatally incomplete. He accentuates throughout the factor of difference, and ignores the unity. It is true that morality is concerned with the temporal, the finite, the human lot. But it is not a description or history of these things. It always seeks a principle by which claims and counter-claims may be reconciled, man may find his true place in the cosmos, and the events of time be seen in the light of values whose validity is eternal. At least this is the aim of the idealist moralists—the moralists against whom Mr. Bosanquet’s criticisms seem to be directed. He is so impressed by the distinction between the unity of principle which is the ultimate reality and the diversified details of the world which are its appearances that he fears to stain its “white radiance” with the

¹ *Principle*, 377.

² *M.E.*, 213.

muddy colours of common life. The life of every day reveals glimpses of the Absolute; and yet the Absolute cannot be brought down to earth and applied to mundane affairs. It is laid up in heaven, and the plain man's proper attitude to it is to be found not in morality but in religion. Of course we cannot avoid the moral attitude altogether. As finite beings under the tyranny of time we live in a world of claims and counter-claims. But the finite intelligent being mistakes his station and its duties if he thinks that it is for him to mould the world as an independent cause. At least "on the whole" he "has the duty and position rather of coming to himself and awakening to his own nature and his unity with" the Absolute.¹

The underlying idea seems to be somewhat as follows. Somehow or other the unity of the universe is dissociated into the many of finite existence; the objective thought which is reality expresses itself in the minds of men; the Eternal appears as a succession in time. What is the proper attitude for the finite intelligent being who finds himself standing at the meeting-place of the One and the many, the infinite and the finite, the eternal and the successive? To this question there are two answers. One answer is that the "glimpses" of the unity, the thought, the eternal, which have been revealed to him, should by his activity yield organising principles for ordering the details of life, heightening their values and informing them with the spirit of the whole. This is the answer of morality, and Mr. Bosanquet discards "moralism". According to the other answer the proper business of the finite being is to find its way back to the infinite whole to which it belongs and in which alone it is real, for man's mind to dwell in the thought which is objective reality, for the temporal to lose itself again in the eternal. This is the way of return—an ethics of reaction from the confusion and delays of finite life. On this way, of course, morality is superseded, transmuted. But just this, it is maintained, is what happens in religion. For in religion the finite finds rest in the infinite, man is at one with God, the temporal is submerged by the eternal.

How far is this true of religion? Religion, we must admit, takes many forms, and its relations to morality have been varied and sometimes peculiar. But perhaps it is safe to assert that, in all its forms, it is an attitude in which the individual soul seeks and experiences some kind of harmony with a power which transcends the visible world and is for

¹ *Principle*, 158-159.

the experient supreme. On the level of philosophical thought this power will be the infinite. But the harmony of finite and infinite has been expressed in different terms as it has been felt in different degrees and ways. The question is, does it imply a unity in which the reality of the individual, *qua* individual, is lost—the finite sunk in the infinite, man absorbed in God, the temporal annulled in eternity?

Undoubtedly there are mystics who would say that this is so. Yet their experience is exceptional, and their interpretation of their experience may not be sound. For most men the religious experience not only starts with the finite individual but also finds the individual "born again" by union with the infinite. Without the distinction between God and man it is as impossible to interpret the religious life as it is to interpret it apart from their union. The believer does not trust in himself, love himself, worship himself. Faith, love, worship all imply a real relation, with two related terms: man and God, the creature of time and the eternal.

If Mr. Bosanquet's view of religion and his speculative version of its truth be valid, then morality and religion are opposed, as he opposes them. I would even say that the function of religion, when represented thus, is to undo the work of creation. I use the traditional term; but it would be the same if I used any other term—emanation, reproduction, appearance—for the process by which God or ultimate reality (however named) is expressed in the world of finite beings interacting in time. This process, so far as we can judge it historically and ethically, implies the ordering and perfecting of individuality through a temporal evolution. But religion annuls both individuality and time. Philosophy or speculation, according to Mr. Bosanquet, confirms this latter attitude. In Hegel's phrase, it is the truth of religion. But of course it is not the same thing as religion. Philosophy only *thinks* what religion attains as an experience. The philosopher does not himself achieve the union with the infinite which annuls finite individuality. He only thinks it or thinks about it; and in order to do this—to understand the experience and explain it to others—he must retain his individual point of view as a thinker. The philosopher, *qua* philosopher, never becomes God, as the mystic is said to do. He sits apart and describes the infinite whole into which the mystic is supposed to have been absorbed. Even the mystic, one must remember, only enjoys his eternity for a moment or two (as others count moments), and time soon snatches him back into the toils of finitude.

Looking at the whole process, what does it consist in?

First, infinite to finite, that is, creation, emanation, appearance, or what you will. Then, finite back to infinite; and this is religion as approved by philosophy. Does not the whole process—in which the finite is pushed out into apparent reality only that it may get pushed back again—seem meaningless? It would not be meaningless if the finite brought back to its source a value gained from its adventure in time: but this would be to enrich the infinite—a palpable contradiction.

After all, on this view, does the religious man or the philosopher do more than anticipate slightly and occasionally in his experience—or in his thinking—that transcending of finitude which comes at long last to every man? Mr. Bosanquet is far too human a metaphysician to say with Spinoza that there is only one way to freedom—the hard way of philosophy. The unity which the philosopher pursues and perhaps finds by his thinking is experienced more directly by the religious man. These both in different ways realise their unity with the infinite. Very few among the multitude of men succeed in doing so during their lives. But the same event happens to the righteous and to the wicked, and in the end they are all absorbed in the infinite. The infinite 'life' itself is not enriched by the righteous, nor impoverished by the wicked. It is the source of both and to it they both return. Not morality only but, it would seem, philosophy and religion also have importance only in and for the finite.

There is another point: Time may be only appearance, but it goes on without end.¹ No suggestion has ever been made by Spinoza or by Mr. Bosanquet which helps us to understand the reason for the fact that the Absolute expresses itself in finite beings and in time. But as it does so express itself we have reason to suppose that this mode of expression will always go on and that it never began. Time may be appearance, not reality, but it is an everlasting appearance. Dr. McTaggart is more hopeful. He does not say with Mr. Bosanquet that "time is as real as the finite". He holds to the ultimate reality of finite spirits, but thinks that the future may issue in eternity. "Perhaps the last enemy that shall be destroyed is Time." Into the arguments for either view I do not need to enter at present; but perhaps Dr. McTaggart's speculation shows the finer insight, as better adapted to bring out the significance of time for the realisation of values.

It is, however, not merely his assertion of its unendingness

¹ *M.E.*, 211.

which deprives time of its significance in Mr. Bosanquet's view. This result is rather due to the way in which he sunders the connexion between time and what he yet calls the 'life' of the infinite. And I do not think that he is justified, on his own theory, in their separation. If the finite spirit of man, which operates only in time, can enter into the infinite, as he says it does, then surely the connexion must work both ways: the infinite must also enter into temporal affairs so that they may be conformed to its values in the only way possible for temporal affairs, that is, in time or progressively. Why is this possibility not admitted? It is not merely because of a natural reaction from the complacent optimism of an earlier generation with its doctrine of human perfectibility. No doubt he has reacted; but his doctrine seems to me to be rooted in a certain abstractness which characterises his view of ultimate reality. So far as this view is clear to me, it does not appear altogether consistent. We have seen that he speaks of the ultimate reality as the living source of the world of finitude and time. He calls it a life, but does not explain how it agrees with and differs from life as we know it in finite beings. It is infinite, but finite and infinite meet in the spirit of man—in the 'thought' which is philosophy and in religion. Only the eternal seems to have no point of contact with its finite correlate, namely, time, and to be merely its negation. And this is in agreement with his definition of reality. Reality, as he defines it, is thought. But by thought he does not mean "a course of ideas in finite experience"; he means "the objective order of things".¹ It is true that in this very passage he lays stress on the concreteness and totality of the real. But surely he cannot mean that "things" even in their objective order are ultimately real—for they are all finite. (And if he is not referring to finite things, his words are misleading or unintelligible.) It must be the "order of things," not the things thus ordered, that is ultimately real. And this order does not involve time. The planet in its orbit and the statesman in his conduct are temporal facts, unintelligible except as processes in time. But the law of gravitation and the notion of justice are not temporal facts at all and may be called eternal. By the "objective order of things," therefore, we must understand a system of categories and values for the apprehension of which time is irrelevant. And if this is our conception of ultimate reality, then it must, in spite of all disclaimers, be held to be abstract and intellectualist; and it will not explain either time or existence.

¹ *M.E.*, 204.

II.—SPINOZA AND CARTESIANISM (II).

BY L. ROTH.

II.

In an earlier article I endeavoured to show that the logical premises and theological bias of the Cartesian philosophy were such as to result, even on Descartes' own admission, in a scepticism for which the discovery, the demonstration, and the communication of rational knowledge were alike impossible. Before considering the systematic logic of Spinoza,¹ it will be convenient to deal with the problems presented by the actual form of his principal work, the *Ethics*.

§ 1. THE FORM OF THE "ETHICS".

As is well known, the suggestion of its peculiar method of presentation was derived immediately from Descartes. At the end of the second set of objections, collected by Mersenne from various theologians and philosophers, there occurs the following passage: "In order that it may be profitable for each and all to read your meditations, containing as they do so much subtlety, and, in our opinion, so much truth, . . . it would be well worth the doing if, hard upon your solution of the difficulties, you advanced as premises certain definitions, postulates, and axioms, and thence drew conclusions, conducting the whole proof by the geometrical method in the use of which you are so highly expert. Thus would you cause each reader to have everything in his mind, as it were, at a single glance, and to be penetrated throughout with a sense of the Divine being."² This proposal to present non-

¹ All references to Spinoza are from Bruder's edition; except for the letters, which are quoted by the numbering and pages of Van Vloten and Land's 2nd edition (1895) and the Short Treatise, which is quoted by the pages of Wolf's English Version (A. & C. Black, 1910).

² *Obj.*, p. 128, 14-18 (ut unico velut intuitu lectoris cuiuscunque animum expleas ac ipso numine divino perfundas).

geometrical matter in geometrical form was not novel,¹ as, indeed, is suggested by the fact that Descartes received it without surprise. He pointed out, however, that the analytic method of proof which he had employed in the *Meditations* is also essentially geometrical, and, as opposed to the synthetic method, which is the geometrical method as generally understood, has the great advantage of revealing to the reader the process by which the author himself came to his conclusions. It suffers, however, he says, from the defect that it only persuades a reader who is of like mind with the author, and who is open to be led gradually along the road of the discovery of truth. When, therefore, the reader is likely to be hostile, and only then, it is necessary to adopt the synthetic method of proof, because, in a close chain of propositions, each one depending on the preceding, misunderstandings and disagreements are easily tracked down and quickly removed.² To Descartes, therefore, the whole value of the synthetic method of exposition is just this rigid certainty of demonstration.

A consideration of the method as it appears in the work of Spinoza reveals precisely the opposite conception. It is first of all not a method of proof, but an order of presentation, as may be proved not only by the very title of the *Ethics*, but also by the fact that Spinoza proposed to deal in precisely the same way with the intricacies of Hebrew Grammar.³ In the *Ethics* itself the geometric form, even as an order, is dropped

¹ To the references of Dilthey (*Gesam. Schr.*, ii., pp. 272-273, 278) and Freudenthal (*Leben.*, p. 113) may be added the curious passage of Albert, to which attention was first directed by Jourdain (*Recherches*: Paris, 1843, pp. 445 ff.): "Accipiemus igitur ab antiquis, quaecumque bene dicta sunt ab ipsis, quae ante nos David Judæus quidam ex dictis Aristot. Avicen. Algaze. et Alpharab. congregavit, per modum theorematum ordinans ea, quorum commentum ipsemet adhibuit, sicut et Euclides in geometris fecisse videtur: sicut enim Euclidis commento probatur theorema quodcumque ponitur ita et David commentum adhibuit, quod nihil aliud est nisi probatio theorematis propositi" (*De Causis et Processu Unius*, ii., tract. i., cap. i.) [The Pseudo-Aristotelian treatise *De Causis* to which reference is supposed to be made hardly answers to this description.]

Meyer, in the third paragraph of his introduction to the *Princ. Phil. Cart.* (p. 4) speaks of a few authors before Descartes who had tried "ut reliquas, ultra Mathesin, Philosophiæ partes, methodo atque certitudine mathematica demonstratas posteritati relinquerent". He himself confesses to have made the attempt, before he knew of Spinoza's work, on the Cartesian philosophy (*ibid.*, § 5, p. 6).

² *Obj.*, p. 155 f. Cf. Joachim, *Study*, p. 10. "Omnia ea quae in tractatu meo explicabam," he writes to Mersenne (*Ep.*, II., lxxvi.), "a se mutuo ita pendebant, ut si scias illorum unum esse falsum, satis habeas ad concludendum rationes quibus utebar omnes corruiere."

³ In animo semper habuit Hebraeam grammaticam, more geometrico demonstratam, luci exponere. (*Pref. Op. Post.* ap. Bruder, vol. iii., p. 275.)

at convenience. The most characteristic portions of the work are to be found in the excursions on particular problems in the appendices and longer scholia. In many passages he has stepped aside altogether and vindicated his method or results¹; in many others he has gathered up the threads of a past argument, or sketched out the path for the future.² Now he gives a detailed criticism of current views;³ now develops a particular point of special interest of his own.⁴ And all in order to lead men, as he phrases it, "by the hand," to the "knowledge of the human mind and its highest beatitude".⁵ The geometric order could hardly have been regarded as the highway to truth by a man who by its help had calmly "demonstrated" propositions which he expressly repudiated.⁶

It would, however, be unfair to Spinoza to affirm that the geometric order was one of convenience only, and nothing more. He adopted it for a definite reason, and that was its impersonality. Mathematics recognises and has no place for personal prejudice. It sees nature 'as in truth it really is,' a whole of law by which all things are. It neither laughs nor weeps at the objects of its study, because its aim is to understand them.⁷ The great enemy to knowledge, Spinoza tells us, is man's habit of interpreting all things by the standard of his own likes and dislikes, and the consequent setting up of merely human norms by which the whole of nature is judged. On the basis of this irrational prejudice men build up a superstitious theology, and, being too lazy and conceited to abandon it when they find it inadequate to meet the facts,

¹ *E.g.*, *Eth.*, II., App. (the practical value of the system); III., pref. (the mathematical method in ethics); iv., 18 sch. (the essential piety of utilitarianism).

² *E.g.*, III., App. (the passions); IV., App. (summary of ethical teaching); IV., 73 sch. (the free man's outlook); V., 20 sch. (power of mind in the control of emotion); V., 42 sch. (the freedom of the wise).

³ *E.g.*, I., App. (final causes and value judgments); V., pref. (Cartesian psychology); I., 15 sch. (infinity); I., 33 sch. (eternity and necessity); II., 48-49 (will and intellect); V., 41 sch. (conceptions of immortality).

⁴ *E.g.*, IV., pref. (good and evil); II., 17 sch. (error); II., 40 sch. (common notions, and grades of knowledge); III., 2 sch. (power of body); IV., 17 sch. (*ἀκρασία*); IV., 35 sch. (asceticism); IV., 39 sch. (alternations of personality); V., 10 sch. (value of ethical maxims); V., 36 sch. (beatitude).

II., pref.

⁶ "... me non omnia quæ in eo tractatu continentur, pro meis agnoscere, cum non pauca in eo scripserim quorum contraria prorsus amplector . . ." (*Ep.*, XIII., p. 235). Spinoza is annoyed with Blyenbergh for not having paid attention to Meyer's preface (*Ep.*, XXI., p. 278). He remarks on the irksome prolixity of the mathematical method in *Eth.*, IV., 18 sch.

⁷ *Eth.*, III., pref. For similar phrases cf. *Ep.*, XXX., p. 305, and *Tr. Pol.*, I., § 4.

erect finally their own ignorance into a god. "It is easier for them," he writes, "to affirm the insoluble character of this and similar problems" (of teleology) "and retain their present innate state of ignorance, than to pull down the whole construction and think out a new one. And so they hold it as a fixed principle that the '*judgments of the gods surpass by far the grasp of the human mind*'; a principle, forsooth, which in itself would have been sufficient to keep truth away from the human race for ever; had not mathematics, which deals not with ends, but only with the essences and properties of figures, pointed out to them another standard of truth."¹ The mathematical method, therefore, meant to Spinoza the free unprejudiced enquiry of the human mind, uncramped by the veto of theology and theological philosophy. If we ask whose philosophy is here under criticism, the answer is clearly, *the philosophy of Descartes*. It was Descartes who had laid it down as a *metaphysical canon* that 'the judgments of God surpass the grasp of the human understanding,' and so gave the sanction of the first philosopher of the age to the principle which 'would have been sufficient in itself to keep truth away from the human race for ever'.² The mathematical method was held in esteem, then, by Spinoza, not because it was the method of Descartes, but because it was one³ of the influences which helped to free him from Descartes. The form of the *Ethics*, in fact, far from being a tribute to Descartes, is the most vivid protest against his authority.

§ 2. SPINOZA AND THE CARTESIAN LOGIC.

The Groundwork: Meyer's Preface.

That Spinoza was specifically dissatisfied with the logic of Descartes, and that he did not keep his dissatisfaction to himself, we have interesting and important contemporary evidence in the preface written to his account of Descartes' philosophy by his intimate friend Dr. L. Meyer. The oft-recurring statement that such and such a question 'surpasses the power of human comprehension,' he says, must be remembered to be the opinion, not of Spinoza himself, but of Descartes. "For our author considers that all those matters,

¹ *Eth.*, I, App., pp. 217-218.

² See Meyer's pref., § 10 (p. 9), quoted below pp. 163-4; cf. *Eth.*, I, 33, sch. 2: "Verum neque etiam dubito si rem meditari vellent . . . quin tandem talem libertatem qualem iam Deo tribuunt, non tantum ut nugatorium sed ut magnum scientiæ obstaculum plane reiiciant."

³ "Præter mathesin aliæ etiam adsignari possunt causæ, a quibus fieri potuit . . . ut homines communia hæc præiudicia animadvertent et in veram rerum cognitionem ducerentur." *Eth.*, I, App., p. 218.

and not those matters only, but also many others of greater sublimity and subtlety, can not only be clearly and distinctly perceived by us, but also are subject to the easiest of explanations, provided only that the human intellect is led to the investigation of truth and the knowledge of things by a *road other than that thrown open and laid down by Descartes*; and that therefore the principles of the sciences as laid down by Descartes, and everything built up by him upon them, do not suffice to unravel and resolve either all or the most difficult of the problems which meet us in metaphysics, but that *other principles must be sought for* if we wish to raise our intellect up to 'that pinnacle of knowledge'."¹

The significance of this statement is only fully understood when we remember that it was made with the full knowledge and acquiescence, if not at the actual request, of Spinoza himself.² This preface is to be regarded as a manifesto of dissociation from Descartes. It is not only on the different questions of metaphysical speculation that Spinoza is declared to be at variance with the man whose philosophy he is expounding, however weighty these questions may be; but on the fundamental logical conceptions on which the whole structure of that philosophy was reared. And indeed, the two characteristic features of the Cartesian metaphysic which are specifically singled out as rejected by Spinoza³ are just those which, in fact, confess the failure of the Cartesian logic. The God of Descartes was nothing more than an asylum ignorantiae; while his doctrine of the impotence of human thought merely covered the impotence of his own method. Descartes had, in fact, sublimated his inability to meet the problems of metaphysics into the metaphysical principle of the incomprehensibility of phenomena.⁴

Central Problem: Nature of God. (a) God as Asylum Ignorantiae.

Now Spinoza, like Descartes, affirmed the dependence of all things and thoughts on God,⁵ but with an entirely different

¹ *Princ. Phil. Cart.*, pref., § 10, pp. 9-10. There seems to be a sarcastic reference to Descartes' letter prefixed to the *Principia*.

² See *Ep.*, XIII. The parts of the preface he objected to (*Ep.*, XV.) were evidently removed.

³ Meyer's pref., §§ 9-10, pp. 8-9.

⁴ "Huius doctrinae sectatores . . . novum attulerunt modum argumentandi, reducendo scilicet non ad impossibile sed ad ignorantiam, quod ostendit nullum aliud fuisse huic doctrinae argumentandi medium" (*Eth.*, I., App. p. 219).

⁵ "We know Him better even than we know ourselves, because without Him we could not know ourselves at all." *Short Treatise*, II., 19 (p. 123); and often.

meaning. By Descartes, as we have seen, both thoughts and things are viewed as discrete entities, linked with their own pasts and futures, and with those of other entities, not by any inherent power of their own, or by any universal laws of connexion, but by the constant reinforcement of their being from the creative activity of God. Now the creative acts of God do not form a rational whole, that is, a whole such that, starting from any one constituent, we could infer the rest. And the reason is that the basis of inference is lacking. The course of the creative acts of God is determined by His ends, but His ends, though very real, are not intelligible to man. It is not to be doubted that such ends exist, or that the conception of ends in nature is valid; but, being the ends of a transcendent being, they are twice removed from the intellect of man.¹ We cannot, on the one hand, trace out connexions in things, because they do not exist; nor, on the other, can we understand the divine plan which causes such connexions to appear. The presence of a rational connexion in the universe, therefore, would be due to the accident that in this one case the divine will had coincided with the human understanding, but we have no guarantee that an accident which has occurred once will occur again. The discrete events remain discrete events. If we have a clear idea of any one, then we have a right to affirm its existence; but from this unique event no other can be deduced—at every step we must refer back to the immediate efficient cause of all, the working of which is beyond our comprehension. "He had conceived the mind so distinct from the body," runs Spinoza's criticism of the crucial difficulty of the Cartesian psychology and its characteristic resolution, ". . . that he was forced to take refuge with the cause of the whole universe, that is, with God."²

(β) *The Modifications of the "Princ. Phil. Cart." in the "Cog. Met." God as Summa Intelligentia.*

Traces of Spinoza's own opinion may be found already even in the *Cogitata Metaphysica*, a work which, with the Principles of Descartes' philosophy to which it is appended, he by no means recognised as his own³ In it he takes over

¹ *Princ.*, I., 28; III., 2; *Med.*, IV., p. 55, 23-26; *Resp.*, V., p. 375, 7-9.

² *Eth.*, V., pref., p. 390.

³ In *Ep.*, XIII., he includes, "præcipua quæ in metaphysicis tractantur" with "secundam partem Principiorum Cartesii" as comprising the treatise which he had dictated to the pupil "whom he did not wish to acquaint with his own opinions". It is not surprising, therefore, to find in it doctrines, e.g., as to the nature of time, which we know him to have definitely repudiated. But, although the *Cog. Met.* cannot be adduced as in any wise authoritative, it is legitimate to use it as illustrative of

the Cartesian God, and, up to a point, and up to a point only, reveals his own position in its regard. Thus God is conceived of still as the conserving cause of the universe, but it is God as immutable and as infinite intellect.¹ God's existence and intellect and essence are one, and His power, too, is only one with His essence; but this involves the position, not that God wills, and then understands what He has willed, but that He understands and, in the very act of understanding, creates.² It is, indeed, from this identification of the will with the understanding (not of the understanding with the will) that the immutability of God may be demonstrated,³ and so, too, His unity—because if there were many Gods the knowledge of each would be dependent on the others.⁴ It is only as the object of His own knowledge that God may be said to create or to know created things; but since the knowledge of God is simple, it follows that His idea or decree concerning created nature is one.⁵ Spinoza carries this stress on the conception of God as supreme intellect to its logical conclusion. Descartes had said that one must not be puzzled with the reflexion that the will of man depends often on external things, and therefore might be conceived to be determined by them and not by God; because God is to be conceived of as having arranged these external things also according to His will. Spinoza transfers the suggestion from the sphere of will to that of intellect. It is true, he says, that God might have created things otherwise; but, seeing that man, too, is a part of created nature, he too would have been different in the universal change of all things, "*in order that he might be able to understand them*". The remark is peculiarly significant in that it places the mind of man in the centre of things, and refuses to consider the very possibility of the universe being other than such as the mind

discussions found elsewhere. Spinoza himself refers to some of its points later, e.g., *Ep.*, LVIII., p. 384.

Freudenthal has shown the strong influence of the Scholastic Revival in the *Cog. Met.*, but the edge of the argument, as M. Delbos has remarked (*Le Spinozisme*, Paris, 1916, p. 24), has been turned by the researches of M. Gilson, who, in his *Index Scholastico-Cartésien* (Paris, 1913) has demonstrated the close connexion between the Scholastics and Descartes himself.

¹ *Cog. Met.*, II., 2 and 4.

² *Ibid.*, I., 2, § 3; II., 7, § 2 note, § 3.

³ *Ibid.*, II., 4, note in Van Vloten's edition: "*Deum immutabilem esse clarius etiam apparebit, ubi eius voluntatem ab intellectu non differre ostensum erit*".

⁴ *Ibid.*, II., 2, § 2.

⁵ *Ibid.*, II., 7, §§ 2-3, 6, 7 (*una tantum erit Dei idea sive decretum de Natura naturata*).

of man could understand. But its significance is rendered even greater in view of the following sentence, in which Spinoza notes that by this one conception he has definitely broken with the philosophers who retained the traditional idea of God as transcendent will.¹ The emphasis is no longer on the power of God, but on the mind of man. And so he can say later: "The Philosopher does not inquire into what God can effect with His supreme power; but judges concerning the nature of things from the laws which God has implanted in them".²

(γ) *The New Orientation; Thought and Necessity as Opposed to Will and Freedom.*

It is not difficult to disentangle the problems and solutions of the Cartesian and Spinozistic logics, however much they are involved in words and phrases which have long been emptied of their meaning. As we saw in the treatment of Descartes, the arguments touching the veracity and the concursus of God have a real logical significance. If we are to think at all, we must have confidence in the value and validity of thinking; and this confidence can spring only from the conviction of the existence of an intelligible order in that about which we are thinking. It is an irony that Descartes, who did so much to further the actual progress of the sciences, should, by reason of the premises which he adopted, have been unable to find a logical justification for the very possibility of science. For the rational investigation of phenomena we need to be assured of two things, first, that we have the ability to reason, and, second, that the universe is such that we can reason about it. The first was denied by Descartes' subordination of intellect to will in man, the second by his affirmation of the incomprehensibility of the universe, which is only another aspect of the subordination of intellect to will in God. Both these positions must be rebutted if science is to be possible. As opposed, therefore, to Descartes, Spinoza held the identity of will and intellect in both man and God,³ thus securing universal validity for the intellect of man; and by declaring God to be not the efficient

¹ *Cog. Met.*, II., 9, § 3.

² *Ibid.*, II., 12, § 5.

³ *E.g.*, *Eth.*, I., 32-33; II., 48-49. *Tract. Pol.*, II., § 6; *Ep.*, XXI., pp. 278-280; LVI., p. 377 ("Si affirmamus Deum potuisse rem non velle," etc.); *Ep.*, XIX., p. 254 ("Quia enim illa [Dei voluntas] ab eius intellectu non discrepat, impossibile reque est, aliquid fieri contra eius voluntatem ac contra eius intellectum; hoc est, id quod contra eius voluntatem fieret, talis deberet esse naturæ ut eius etiam intellectui repugnaret, ut quadratum rotundum").

and transeunt, but the immanent, cause of the universe,¹ secured its rationality by declaring its groundwork to be reason.

So far, then, it seems to us, Meyer's claim is justified. The foundation of Spinoza's logic is fundamentally different from that of Descartes, and it must therefore be regarded as a new and distinct system. It is now clear why the controversy anent the freedom of the will assumed such importance at this crisis in the history of philosophy. It is not a psychological problem so much as a logical one. To Spinoza necessity is a *logical* theory. The universe must be such that it can yield its secrets to thought; thought must be capable of discovering those secrets. If either is unreliable, then there can be no science, and the pursuit of knowledge is a sham. The doctrine of necessity, therefore, stands at the very heart of Spinozism, as we have seen the doctrine of freedom to stand at the heart of Cartesianism. Just as the objections offered to Descartes centre around the problems attaching to the being and attributes of a creational Deity, and bring into question, not the doctrines themselves, but the method by which they were reached; so the objections offered to Spinoza scattered through the correspondence are directed for the most part against the idea of the scientific universe open to the investigation of the human mind. It makes no matter who it be—the secretary of the Royal Society in London, or the philosophising merchant of Amsterdam, or the professor of metaphysics at Leyden, or the doctor of Utrecht, or the great Leibniz himself²—it is always the same charge again and again; here is a man who has dared assert that God, in the words of a modern writer,³ “must be conceived of as one who is absolutely faithful to his own methods, and who permits those methods to be scrutinised by man”. “What!” cries the outraged Dr. Velthuysen, “God cannot make a light weight lift up a heavier one, or a slow-moving body catch up one moving twice as fast!” and adds significantly, before passing the final judgment of “atheism,” this author “refuses to go with Descartes, whose teaching, however, he would like to be thought to have adopted, and affirm that just as the natures of all things are different from the nature

¹ *E.g.*, *Short Treatise*, I., 2, p. 30, 1-3; *Eth.*, I., 18; *Ep.*, LXXIII., p. 411.

² *Eps.*, 3, 5, 71, 73-75 (Oldenburg); 18-24 (Blyenbergh); 42 (Dr. Velthuysen); *Lebensgeschichte*, p. 228 (Prof. Volder); and pp. 218 and 235 (Leibniz).

³ Beard, *The Reformation*², (Hibbert Lectures, 1883), p. 392.

and essence of God, so their ideas exist freely in the divine mind".¹

§ 3. THE DEVELOPED DOCTRINE.

(a) *The God of the Theology.*

How Spinoza carried this conception of a rational Nature over into the realms of theology has been brilliantly expressed by an English expositor of the first part of the *Ethics*: "He did not simply break off from theological speculation, and seek to establish philosophy on an independent footing; he seems intent on showing that theological speculation itself, when reason is once allowed free play, must at last purge itself of anthropomorphism and come round to the scientific view. Spinoza does not ignore theology, but provides an euthanasia for it; and there is every reason to believe that in so doing he faithfully reproduces the development of his system in his own mind. . . ." ² Whether Spinoza, in order to achieve scientific orientation, had any occasion or no to leave the theology from which he started, may be left for later consideration. It is, however, of the supremest interest and importance to note that the characteristics which we have seen to be implicit in the Spinozistic God in the *Cogitata Metaphysica* are put forward without apology, and as self-understood, in the work which he devoted specifically to theology.

The third, fourth, and sixth chapters of the *Tractatus Theologico-Politicus*, which are nothing but a polemic against the Cartesians, illustrate this fact most clearly. They comprise the bold and clear affirmation of the reign of law, from the recognition of which, and of which alone, we can attain knowledge of God. If we break with the postulate of the rationality of Nature, then we break with the idea of God; from miracles we learn nothing but atheism.³ To Spinoza, too, as to Descartes, the arguments for the existence of God depend on the existence of the mind; but it is not the mind as individual will, confined to the consciousness of its imperfection, but the mind as universal intellect, affirming and discovering itself in the very process of thought. From the one conception we are brought to the inference of the existence

¹ *Ep.*, 42, pp. 339 and 340.

² Pollock, *Spinoza*, 1912, p. 155.

³ "Si quid igitur in Natura fieret quod ex ipsius legibus non sequeretur, id necessario ordini quem Deus in æternum per leges Naturæ universales in Natura statuit, repugnaret, adeoque id contra Naturam eiusque leges esset, et consequenter eius fides nos de omnibus dubitare faceret, et ad Atheismum duceret." *Theol.-Pol.*, cap. vi., § 28.

of an independent supreme will; from the other to that of a self-dependent supreme reason. Or we may phrase the difference in another way. Descartes could only argue to the validity of thought from the existence of God; Spinoza argued to the existence of God from the validity of thought. "Since the existence of God," he says, "is not known through itself, it must necessarily be inferred from notions the truth of which is so firm and unshaken that no power can be given or conceived by which they can be changed. To us at least from the time when we infer from them the existence of God, they must so appear, if we wish from them to infer it beyond all possibility of doubt. For if we were able to conceive that those very notions could be changed by any power whatsoever it might be, then we would be in doubt concerning their truth, and consequently even concerning our conclusion, *i.e.*, the existence of God."¹ The reference of the passage is clear. The Cartesian doubt can never bring to certainty; and the Cartesian God, with his power to shake our belief in the validity of thought, is a self-contradiction.

It is to be noted that Spinoza is not satisfied with the mere conception of law as existing. Law must be conceived of, not only as existing in the abstract, but as knowable, that is to say, as open to the investigation of unprejudiced mind. The word "miracle" may be understood in two senses, either as an actual break in the order of Nature, or as an event which cannot be explained by natural causes. That belief in the former is the merest atheism we have already seen; but belief in the latter is only a subtler and more dangerous form of the same, for, implying as it does the doctrine that there are things which by their very nature are closed to the human mind, it puts a direct bar in the way of our only possible approach to truth and God. To speak of the transcendence of Nature and the incomprehensibility of the workings of God's will, far from saving the idea of God, destroys its meaning. Men only take sanctuary with the idea of God, he complains, when they cannot find a rational explanation; whereas, as a matter of fact, it is only when they have a rational explanation that they may be said to be appreciating somewhat of the idea of God.²

¹ *Theol.-Pol.*, vi., § 17.

² "Quia naturæ potentia nulla est nisi ipsa Dei potentia, certum est, nos eâtenus Dei potentiam non intelligere quatenus causas naturales ignoramus; adeoque stulte ad eandem Dei potentiam recurritur quando rei alicuius causam naturalem hoc est ipsam Dei potentiam ignoramus." *Theol.-Pol.*, i., § 44. "Ex eo quod nostrum captum superat nihil intelligere possumus. . . . Nos eo melius Deum Deique voluntatem cognoscere

(β) *The God of the Logic.*

This parallel conception of the unity of God and the unity of created Nature as a rational whole, which is the core of the *Cogitata Metaphysica* and the *Tractatus Theologico-Politicus*, is made the pivot of the specifically logical treatise, the *De Intellectus Emendatione*. That this early and unfinished treatise (which contains in brief space the essential doctrine of the *Ethics*) bears in its detail the mark of many extraneous influences, has been often pointed out.¹ For our purpose it is more important to note that as a whole it is specifically directed against any logical theory which sets out, as we have seen Descartes' logic to do, from the individual idea as discrete.

Taking without discussion the fundamental premiss that thought reflects reality, or, in Spinoza's terminology, that an idea contains "objective" all that its "ideatum," or correlate in things, contains "realiter"; in order to understand the nature and significance of thought in general, we are told we must study what a thought or an idea is and involves. Since the thought or idea reflects a real thing, whatever is predicated of the thing is to be predicated of the thought. But in Nature there are no things in the sense of discrete objects. Reality is a whole in which all things are interconnected, and therefore to speak of a "thing" is to use a false abstraction, there being in reality no separate things at all. Since, then, a thing has no existence apart from the system of things, it cannot be seized hold of by itself. As soon as we attempt to grasp it, it grows, as it were, under our hands, involving an ever-widening circle of connexions, until finally the process is only brought to an end by the bounds of the completed system itself. But what is predicated of things is to be predicated of ideas. Just in the same way, therefore, as a thing eludes our grasp, so an idea eludes our grasp, if we attempt to isolate it. An idea can be treated as discrete only if the thing it reflects is discrete, but a discrete thing, "within the bounds of created Nature," does not exist.² It follows that

quo melius res naturalis cognoscimus. . . . Ei igitur plane nugantur qui ubi rem ignorant, ad Dei voluntatem recurrunt; ridiculus sane modus ignorantium profitendi." *Ibid.*, cap. vi., §§ 21, 22, 23.

¹ See Gebhardt's *Spinoza's Abhandlung über die Verbesserung des Verstandes* (Heidelberg, 1905), and the same author's introduction to his translation in Meiner's series (Leipzig, 1907).

² Addo quod idea eodem modo se habet objective ac ipsius ideatum se habet realiter. Si ergo daretur aliquid in natura nihil commercii habens cum aliis rebus, eius etiam si datur essentia objectiva quæ convenire omnino deberet cum formali, nihil etiam commercii haberet cum aliis ideis, id est, nihil de ipsa poterimus concludere; et contra quæ habent commercium cum aliis rebus, uti sunt omnia quæ in natura existunt, intelliguntur et ipsorum etiam essentia objectiva idem habebunt commercium,

the very essence of an idea lies in its connexion with other ideas. There is, in fact, only one idea, *i.e.*, the systematic unity of all ideas, as there is only one thing, the systematic unity of all things.¹

This one idea is the norm of the mind's thinking with which the Spinozistic methodology begins, and the process of the mental development of the individual is just the process of approximation to it. But this conception is not to be taken in any mystic sense. No mere dreaming on "absolute unity" is to bring the mind to perfection, and this for the reason that the "objective" unity has a "real" content in the totality of Nature. The parallelism is so strict that as far as we are concerned the two are interchangeable. "It is a self-evident truth that the mind understands itself more, the more it understands Nature." From one point of view, the mind grasps the whole of Nature, only when it grasps or becomes the most perfect idea; from another, it only knows of, and approximates to, the most perfect idea, as it learns more and more of created Nature.²

It follows that there is a real order and a real progress in ideas. Theoretically speaking, the mind has only to be started on any one idea in order finally to arrive at the whole, since the idea contains in itself precisely the same system of connexions (leading finally to the whole as a totality) which is contained in the thing of which it is the idea. The "concatenation" in either case is one and the same,³ and it therefore makes no difference from which side the movement is begun. The criterion, then, of truth and of error, is precisely the length to which any suggested "concatenation" may be traced. Error, like truth, quickly reveals itself as such, simply by the fact that, when followed out in its connexions, it does not, as does truth, result in and embrace the whole system.⁴

The process of human thought, therefore, and the process

id est aliae ideae ex eis deducuntur, quae iterum habebunt commercium cum aliis et sic instrumenta ad procedendum ulterius crescent. *D.I.E.*, § 41 (*cf. Eth.*, I., 36).

¹ *Ibid.*, § 42, *cf.* § 76 with note 2.

² *Ibid.*, §§ 39-40.

³ "Concatenatio intellectus . . . naturae concatenationem referre debet" (§ 95); "anima . . . perget objective eosdem effectus formare" (§ 60 n.), and often.

⁴ "Mens cum ad rem fictam et sua natura falsam attendit ut eam pensitet et intelligat bonoque ordine ex ea deducat quae sunt deducenda facile falsitatem patefaciet; et si res ficta sua natura sit vera, cum mens ad eam attendit ut eam intelligat, et ex ea bono ordine incipit deducere, quae inde sequuntur, feliciter pergat sine ulla interruptione sicut vidimus, quod ex falsa fictione modo allata statim ad ostendendam eius absurditatem et alias inde deductas prebuit se intellectus." § 61, *cf.* § 104.

of created Nature, are one and the same; the "spiritual automaton"¹ and the universe it sets out to investigate, are constructed according to the same pattern. The human mind is simply a fragment of the totality of thought,² just in the same way as a thing is only a fragment of the totality of things, because the human mind is one with its ideas and its ideas reflect ideata from the world of things. The "one true idea" of the logic and the "God" of the theology are then one and the same; and together they stand in a twofold relationship, on the one hand to their correlate, the totality of Nature, on the other hand to their part, the mind of man.

(γ) *The God of the Metaphysic.*

Leaving the various problems of the logic for later discussion, we may turn to the metaphysic in order to inquire into the nature of its fundamental premiss and its relation to the intellect of man. Spinoza's arguments for the existence of God are given in the eleventh proposition of the first book of the *Ethics*. After ten propositions have been allowed to pass without a mention of God, the demonstration is attempted that "God or a substance consisting of infinite attributes, each one of which expresses eternal and infinite essence, necessarily exists". This apparent paradox is due to the fact that Spinoza has taken over current philosophical terms, and by a close insistence on exact definition shown that they can only lead to his own views. The "causa sui," the "substance," the "attributes," the whole metaphysical terminology, in fact, which Descartes and the contemporary revivers of scholasticism had taken over from mediæval thought; all, when allowed to develop their own inner logic, result in the God of Spinoza. By the time he comes to the eleventh proposition, all he has to do is to substitute the word "God" for the word "substance".³ The first demonstration, therefore, by the "reductio ad absurdum" method, is the only logical one; God is that the non-existence of which cannot be conceived.

This argument is only differently presented in the alternative demonstrations, which, in Spinoza's own words, all depend on the proposition that "either nothing exists, or a

¹ § 85.

² § 73. The conception is detailed in *Ep.*, 32 (p. 310), cf. *Joachim*, pp. 92-93.

³ It follows that the idea of God in Spinoza's system is prior to that of substance, as is shown by M. Delbos in his paper read before the 3rd International Congress at Heidelberg on "La notion de substance et la notion de Dieu dans la philosophie de Spinoza"; cf. the same writer's *Le Spinozisme* (Paris, 1916), pp. 18-19.

being, absolutely infinite, necessarily exists as well".¹ This fundamental conception of God as that which exists of itself, is not only the pivot of his whole philosophy, but also what appears to have been considered in his own time as its characteristic and peculiar feature.² If we ask what it means to say that something "exists of itself," and what significance it can possibly have for logic, we may refer to the first alternative demonstration. This turns again upon the point that the whole of things cannot be contingent, because a universal contingency is self-contradictory. We speak of the existence of any comprehensible object as possible, because we do not know whether the universe as a fact contains it, as we think it might. By the fact that it is comprehensible in thought we know that it has claims to be considered a candidate, as it were, for existence; but owing to our ignorance of the complete detail of the structure of things,³ we cannot say positively whether it has or has not been admitted. Such a doubt applies to every thing except one, and that is clearly the whole structure of things itself. There can be no question of its failing to harmonise with its own self, and therefore of necessity it is. The existence of God is involved in His own nature, but that is because there is nothing other than God. "Whatever is, is in God, and nothing can be or be conceived without God."⁴ The two orders of the logic, therefore, the order of ideas and the order of things, are two expressions of one and the same unity, which is Deus sive Natura.⁵

That this conception is historically not the end, but the beginning, of Spinoza's metaphysic, may be seen from an examination of the first chapters of his earliest essay, the *Short Treatise Concerning God, Man, and his Well-Being*. Here we find already fully expressed not only the opposition between contingent and necessary existents which leads us to the idea of the one, and only one, necessary existent, and the deduction of its immutability and perfection from the

¹ "Ergo vel nihil existit vel ens absolute infinitum necessario etiam existit." *Eth.*, I., xi. al., p. 194; cf. Joachim, *Study*, p. 45, and p. 51, n. 1 (on *Ep.*, XII.).

² *Eps.*, XXXIV.-XXXVI. In *Ep.*, XII., Spinoza reminds Meyer that he had demonstrated it to him "viva voce" (p. 230).

³ 'Res tantum ex parte novimus,' *Tract. Pol.* II., § 8; 'naturæ ordinem . . . ignoramus,' *ibid.*, § 22; cf. *Theol. Pol.*, XVI., § 11, and IV., § 4, *Eps.*, VIII.-X. (on definition) and often. The 'naturæ ordo,' therefore, is a problem to be worked out and the way is left open to the purest empiricism.

⁴ *Eth.*, I., 15.

⁵ *Eth.*, II., 7, sch.

fact that outside it there is nothing;¹ but also its being the idea of the whole of Nature from the very consideration of the unity of which its essential character may be deduced.² Our thesis that in itself it is sufficient to sever Spinoza's system once for all from that of Descartes may be finally illustrated from, and summed up in, a consideration of the first phrase and the key-word of the *Ethics*, the 'causa sui'.

(δ) *God as 'Causa Sui'*.

The question as to whether God may rightly be called 'causa sui' was raised by the priest Caterus in the first set of objections to Descartes' *Meditations*. The discussion centred round the conception of God as efficient cause, that is, in His characteristic function of creation, and Descartes finally affirmed that, since God preserves Himself in existence, He may be called the efficient cause of Himself or 'causa sui'.³

The interesting point to note is that Descartes views God consistently under the categories of will. Being and perfection are only other aspects of the power which enables any entity to preserve itself. For this reason, as Descartes goes on to say, no human being may be said to exist 'per se,' because he depends on an external power for his continued preservation.⁴ Cause, therefore, to Descartes, means producing—and conserving—power, and, as Spinoza remarks, it is this conception of cause which underlies the very statement, "Cogito, ergo sum".⁵

The efficient cause borrows its terminology from the vocabulary of effort. Its objects are graded as being, not more or less intelligible, but more or less easy of attainment. And so we see that the Cartesian axioms employed in the "Arguments drawn up in geometrical fashion" in the appendix to the second set of objections, all of which turn upon the idea of cause, involve the terms "easy" and "difficult". "That which can effect what is greater or more

¹ *Short Treatise* I., 1, p. 18, 25 f.; p. 20, 19 f.; 2, p. 30, 2; II., cap. 4, p. 45, 15 f.; 6, p. 49, 22 f.

² *Ibid.*, I., 2, p. 22, 3 f.; 24, 31 f.; 26, 34 f.

³ "Plane admitto aliquid esse posse in quo sit tanta et tam inexhausta potentia ut nullius unquam ope eguerit ut existeret neque etiam nunc egeat ut conservetur atque adeo sit quodammodo sui causa; Deumque talem esse intelligo" (*Resp.*, I., p. 109, 3-7); cf. the reply to Arnauld (p. 231, 24 f.), "... ubi tantum intellexi rationem propter quam Deus non indiget ulla causa efficiente ut existat, fundatam esse in re positiva, nempe in ipsamet Dei immensitate qua nihil magis positivum esse potest".

⁴ *Resp.*, I., p. 111, 8-12.

⁵ "Si quis dubitare velit an ex nihilo aliquid fiat simul poterit dubitare an nos quam diu cogitamus simus." *Princ. Phil. Cart.*, I., 4, sch.

difficult, can also accomplish what is less" is the eighth axiom; "it is a greater thing to create or conserve substance than the attributes or properties of substance," is the ninth. On these two axioms the whole of the Cartesian *a posteriori* arguments for the existence of God are based, and their importance, therefore, cannot be overestimated. But neither can their unintelligibility. "For what does he mean by 'easy'?" cries Spinoza in the first, and one of the only, explicit criticisms of Descartes in his account of the Cartesian philosophy, "and what does he mean by 'difficult'?" For nothing can be called difficult or easy absolutely, but only in respect of its cause; and so one and the same thing may be called both easy and difficult at the same time in respect of divers causes!"¹ More power or effort cannot be taken as a definition of essence. A thing "is" not in so far as it has power, but has power in so far as it is.² We can only employ the idea of cause in the definition of God if we recognise that an efficient cause may be internal as well as external. But this is, of course, to destroy the notion of cause altogether, because such an immanent cause "by no means produces anything outside itself".³

The perfection, then, attributed throughout by Spinoza to God is not immensity of power, but self-completion of being. God, and the correlate of God, or Nature, "is and is known through himself". He is "the object of his own knowledge, or rather He is his own knowledge," and to Him and His knowledge nothing is possible, but everything is.⁴ In this logical sense He is a 'causa sui,' a completely self-contained entity which cannot be thought away. So the very first words of the *Ethics* link up the whole movement of the various other expressions of Spinoza's philosophy, and throw into clear relief the nature of its primary and ultimate distinction from that of Descartes.

The clarity and distinctness of an idea, we may say, is indeed the test of its truth; the fact of the human mind as

¹ *Princ. Phil. Cart.*, I., 7, sch. The note is characteristic. "Ne alia exempla quæras cape exemplum aranæ quæ telam facile textit quam homines non nisi difficillime texerent; homines contra quam plurima facillime faciunt quæ forte angelis impossibilia sunt."

² *Ibid.*, n. 2 ("vis qua substantia se conservat nihil est præter eius essentiam") with reference to the *Cog. Met.*

³ *Short Treatise*, First Dialogue, p. 34, 29; cf. *ibid.*, I., 3, p. 41, 20; *Ep.*, LX., p. 386 ("intelligo enim causam efficientem tam internam quam externam").

⁴ *Short Treatise*, Appendix I., prop. 4, proof and cor. (pp. 155-156); *Cog. Met.*, II., 7; cf. the criticism of the idea of perfection in *Eth.*, IV., pref.

thinking is indeed the foundation of knowledge; God is the conserving cause of all, both of things and of thoughts, and of the connexions between things, and of the connexions between thoughts. But all this is because there is only one idea which, being self explanatory, is clear, and only one idea which, there being nothing outside it, is distinct; because the human mind thinks not in terms of now and here, and personal circumstances, but universally for all time, all places, and all men; because the universal order of thought and the universal order of things is one in the self-subsistent system of the whole, which is God. The eternal verities are eternal and true; God willed them so to be; but 'willed' them not in the sense of producing them as a casual and inconsequent creation; His will and intelligence are one with His essence, and therefore they flow from His free necessity, as do properties from a mathematical figure. Without God, the 'causa sui,' nothing can be or be conceived, not because God is absolute power, but because God is absolute reason.

§ 4. RECAPITULATION.

The results so far achieved may be summed up as follows:—

The logic of Spinoza far from being dependent on, and a development of, the logic of Descartes, is a conscious and definite presentation of precisely the opposite point of view. The discrete idea; the creational deity; the voluntaristic metaphysic; have been shown to lead to a scepticism in which proof has no meaning and knowledge no place. The ideal of freedom, if severed from that of law, leads inevitably to chaos; and the logic of Descartes allows the uncontrolled ideal to penetrate all spheres in turn from the individual thoughts of man to the volitional activities of God, as if the inherent defects of the first premiss might be rectified by allowing it an ever wider licence. The experiment, however, boldly and uncompromisingly carried out though it was, was foredoomed to failure. It reached its highest point in its transference, from the sphere of theological physics to that of logic, of the conception of God as conservational cause, but, being unable to deny of God the freedom it affirmed of man, was forced to see the universal order within its reach collapse into a universal chance. Knowledge as a whole of connected ideas was shown finally to be impossible, because the existence of connexions between one idea and another was, ex hypothesi, wanting.

Spinoza, consciously recognising the necessity of this conclusion, and yet convinced of the universal character of knowledge and the universal validity of logic; was bound by the nature of the case to put forward a different premiss. If the discrete idea cannot lead to knowledge and yet knowledge is possible, then we must find some other starting-point from which to set out on our search. On the one side are the individual ideas corresponding with the individual things; on the other side the totality of knowledge, corresponding with the totality of things which can be known. If we start from individual ideas, we cannot, as the Cartesian attempt had shown, arrive at the totality of knowledge. There is left then the alternative of assuming the totality of knowledge and working down from it to the individual ideas. This alternative Spinoza adopted unconditionally in whatever sphere of thought he entered upon, and in logic, theology, and metaphysics, insisted on the primary conception of God not as a-rational will but as universal reason embodied in the oneness of "natura naturata".

The conclusion we have reached is, as a general result, by no means novel. The method adopted, however, has revealed at least one important fact. If the traditional account of Cartesianism be the true one, then Spinoza's criticism is unintelligible. It may be that, following this criticism, we should be prepared to revise our interpretation and estimate of Cartesianism. But, however that may be, it is clear that Cartesianism *as thus understood* can by no manner of means be considered to be the source of the philosophy of Spinoza.

III.—A VINDICATION OF COMMON SENSE.

BY C. A. STRONG.

MRS. STEPHEN has given us in her little book, *The Misuse of Mind*, a wonderfully lucid, compact, and interesting account of M. Bergson's philosophy; there is a fineness of grain about it, a minuteness and exactness, and at the same time a grasp of the system as a whole, that entitle her to rank as one of his foremost disciples. The charming literary quality of what M. Bergson writes, the happy metaphors, are here replaced by terseness, directness, simplicity; but the main outlines of his thought only stand out the more boldly. Her assimilation of it is, in fact, perfect (as his Prefatory Note attests). And her assent to it, so far as one can see, is unqualified—for the even tenor of her exposition is unmarred by a breath of criticism. It is the more needful that we should subject these principles, in the form she gives to them, to a careful scrutiny, with a view to determining how far they really correspond to fact.

For fact is Mrs. Stephen's great word. Common sense, and still more science, are, according to her, falsifications of fact. By fact she means the immediate data of experience. Common sense and science are in the nature of explanations, superinduced upon fact; they are got by making abstractions from it, that overlook essential elements; and these abstractions are taken by the common man and by the naïve man of science for real; though in truth only the data of experience are real.

Our task will therefore be to inquire: (1) Has Mrs. Stephen, following Bergson, given a correct account of the data of experience? (2) Is it true that the data of experience are real, and the objects of common sense and of science not real?

I.—THE TRUE DATA OF EXPERIENCE.

"If you have anything presented to you," she begins, "which you do not understand, the obvious question to put to yourself is 'what is it'? Suppose in a dark room which

you expected to find empty you stumble against something. . . . You find it has a certain texture which you class as rather rough, a temperature which you class as warm, a size which you class as about two feet high, a peculiar smell which you recognise, and you finally jump to the answer to your question: it is 'a dog'." Here is an example of the work of the intellect in falsifying experience. There *are* no qualities, such as warm, rough, a certain smell, a certain tactile size, that can be repeated on different occasions; there is only, each time, precisely what you do feel, with an altogether peculiar flavour, and each time it is different. Secondly, there *is* no object, no dog, composed of these qualities and distinct from your immediate experience; there is only, again, precisely what you feel. The dog, as an existence distinct from your experience, is imaginary; only your experience is real.

The work of the intellect in falsifying experience thus has two stages: (1) the abstraction of *qualities*; (2) the putting them together into an *object*. With each step we get further away from experience as it really is.

(1) *As to the qualities.* The argument is that if you treat any datum as rough or warm or pink or sweet, you are substituting for it an abstract idea, something supposed to be *the same* in every experience of each of these kinds. This would certainly be a falsification. For it may be admitted (though it is abstract reasoning, not observation, that leads to this view) that no two experiences probably ever are exactly alike.

But need the ordinary man be presumed to assert that they are? If he calls a certain datum 'warm,' is it not the datum itself that he designates by that name—is he not using the word in the first instance denotatively? Suppose a mother says of her baby, 'See how pink its cheeks are,' is she not drawing attention to the colour actually given in her experience? Need she be understood as asserting that she has exactly the same experience as when she looks at roses or at pink ice-cream? It seems to me that a little nominalism would be of service here. And if, in drawing attention to her actual experience, she suggests (without intending to do so) a similarity to these other data, are they not truly similar? Mrs. Stephen would seem committed to denying, not only that data are ever the same, but that they are ever similar, to justify her thesis of falsification.

I think I understand what she is really aiming at, and I entirely sympathise with the point when it is properly put. She is in arms against the German idea that experience is

wholly a matter of thinking relations, and that there are no sensible data, not resolvable into relations, between which the relations hold—that the only consciousness, *e.g.*, of colours is the thought of that which different shades of them have in common: she sees that there is a function of sensible awareness, which is presupposed by thought. But she still uses the German vocabulary—she will not call anything a ‘quality’ except the universal: as if pink and green were something we think, not something we see. I entirely agree that universals of this kind are abstractions, and unreal; there is a falsification of (perceptive) experience if you suppose that (perceptive) experience is experience of *them*.

But I shall perhaps be told that the mother, when she looks at the child’s cheeks, is attending only to that in them which they have in common with roses and other pink things, and withdrawing her attention from the special and unique shade which they actually present. I doubt if this is the case; but, granting that it is, there is an obvious answer. If her attention is turned to this imaginary pink, by what right is the actual shade described as the datum of her experience? Surely nothing is more truly a datum of your experience than that to which you attend. If I fix my attention intently on a small object, such as the back of a book, all the rest of the visual field may disappear from view; and it would not be a faithful account of the data of experience that would include it. Similarly with the universal pink. For note that, by hypothesis, it is no longer perceptive experience that the mother is having, but her mind is occupied with universals. But I think she really sees the child’s cheeks as they are, and if she says ‘pink,’ uses the word nominalistically.

The foregoing, however, may perhaps involve a misconception of Mrs. Stephen’s point. She may not mean to suggest that the mother is engaged in any but perceptive experience, but she may hold that in this there is a certain abstraction of qualities and construction of objects which are other than the true facts of experience. The ‘qualities’ are imaginary, not in the sense that we have images, distinct, *e.g.*, from the given pink, by means of which we conceive them—for in that case we should be imagining and not perceiving, or imagining in addition to perceiving—but in the sense that we use only a part of the given pink, abstracted but not separated from the whole of it, as our means of conceiving the quality: this part only, and not the whole experience, determining the sequence of our thoughts. But, if this is her true meaning, there are two alternatives: either the thought of pink, of the ‘quality,’ is this abstracted part, and

then, since the part is there, and must needs be in order to be abstracted, there is no falsification of experience; or else the thought of pink is nothing sensible or experiential at all, but something grasped by means of this part, or indeed of the whole actual experience of the pink—in which case there may be said to be a falsification (whether of experience or not we shall see), since no such thing as this thought of pink, this thought-of pink, exists.

Now the latter, I take it, is the true interpretation of Mrs. Stephen's and M. Bergson's distinction. "Abstraction" does not mean the isolation of a part, for if such isolation were possible it would not be a falsification, and we are told repeatedly that experience has no parts, so that it is not possible; it means apprehension, by means of something in experience, of a non-existent entity, an idea or 'essence'. And, if this be the true meaning, I am able to agree with them at least in so far as to admit that there are two such antithetical things: facts of sense, and abstractions.

But the important question now arises, which of these is correctly described as the datum of experience. Mrs. Stephen's doctrine may, I think, be said without injustice to imply that there are two kinds of data: data of sense, and data of the intellect. It may also be said to be that these are data simultaneously; and here I should begin to disagree with her. I believe that the original data, in perception no less than in abstract thought, are data of the intellect, and that the facts of sense become data only subsequently.

I am anxious that this discussion should not degenerate into a mere dispute over words, and I recognise that the term 'data' may be used in different senses. But, in the philosophical sense in which it corresponds to the term 'given,' it seems to me that there is no other possible criterion of the datum but *exactly what we are aware of*. If the mother is aware only of a general pink in the child's cheeks, it is useless to tell us that the real datum of her experience is a very special pink. She might look for the special pink and find it, but then it would be a new datum. On the other hand, what she sees may be this special pink, as an external quality—in the child's cheeks, that is to say—and then it is useless to tell us that her real datum is not this quality, which is unreal, but a fact of sense, which is real. Her real datum is the unreal quality.

In the same way, the real datum of a man who is remembering is something not now existent, which he refers to the past; the real data of a man engaged in abstract thought are the ideas that absorb him; the real data of sight and hearing

are external things and sounds. You cannot recall the thinker from his abstract ideas to the visual, verbal, or muscular symbols which he may be using in order to conceive them, without violating his experience, and replacing what he is aware of by something of which he is not aware at all.

Now this substitution for the true data of experience—which, I grant you, are as such unreal—of something we are not aware of at all, but only might become aware of, namely, the states of sensibility by means of which we think, perceive, remember, and expect, is one of the twin errors that seem to me to lie at the foundation of M. Bergson's philosophy. It is what the Germans call 'psychologism'. This is a true falsification of experience. The states are real enough; we could not perceive or think or remember without them; but they are not at the moment data of awareness. They only become data of awareness in later introspection.

(2) *As to objects.* Let us return to the poor dog, to whom Mrs. Stephen denied objective being. (And, I fear, the pink-cheeked baby would fare no better at her hands.) As this thought-of, looked-at, and smelt dog is a creation of the intellect, we must agree with her that, *quâ datum of experience*, he does not exist; though we shall probably consider that, in so far as he himself sees, acutely smells, and even thinks, he exists as truly as ourselves. But we are concerned at present with data, not with real things.

In choosing as her example the stumbling upon something in a dark room, Mrs. Stephen has taken an exceptional case, in which we need to make up our minds, and have to consider first what I should call the psychological facts, the states of our sensibility. "If you have anything presented to you which you do not understand," she began—but what is presented to us we usually do understand, and that on the instant: we understand it so well, that from the outset the physical thing is given to us, and we never attend to the mere facts of sense at all. Suppose we come into a *light* room and find a dog: our very first experience is, I think, correctly described as *seeing the dog*. We do not "class" his qualities, if you mean by classing any actual process of thought; nor is there any actual process of "jumping" from the qualities to an object, but the dog, brown, shaggy, and alert, stands before us from the start.

But this, I shall be told, is the result of a long process of education, in which we began with our actual momentary experiences, and compared them and classed them, with the outcome of finally reaching the conception of a dog. Of

course I am far from denying that there has been such a process of education, and that much that we appear to see, hear, and touch we only imagine. But the question is not whether we have added ideas to the original data; it is whether the original data were states of our sensibility or external qualities and objects.

I venture to doubt whether there ever was a time when our visual experiences were not experiences of objects. It seems to me probable that a new-born calf, molested by a dog, would from the outset react to his aggressor as an external object—to be sure, of a vague and as yet ill-understood sort. It is said that a chick, not very long after emerging from the shell, pecks spontaneously at a grain of corn; so that even this little animal does not start with a mere unobjectified experience.

But is there a better test of what an animal experiences than the way it reacts? If the chick pecks at the grain of corn, how can you say that it does not experience it? 'Experience,' concretely rendered, means *see, hear, feel* with the hands; and is it not a very great falsification of experience to say that at the outset animals see, but do not see objects? It is true that they see the objects only by an act of apprehension, or intellect, leaping beyond the mere sensations; but we are so organised as to perform this act from the outset. The mere attending in the direction of an object, prior to all thought, and still more the reacting to it, converts the sensation into a sign of the object, and so causes a vision of the object to appear before the mind.

Thus, once again, we are brought face to face with the difference between what may be called the *discursive* and the *apprehensive* use of the intellect. In discourse one thought-of object is used as the sign of another—the bark of a dog as the sign of his look, the back of anything as the sign of the front, the outside of the inside, etc. It is by apprehension that any single object is thought of, seen, heard, or touched at all—a sensation or image, which really is a state of sensibility internal to our body, being used as the sign of it, that is, the determinant of our acts and thoughts. Apprehension is thus earlier than discourse, and presupposed by it. It is biologically and psychologically original, there being no experiences that are not addressed to objects outside or inside the body, or further away than either, *i.e.* in time.

It is so important to realise clearly that even the data of sight and hearing are data of the intellect, that I propose to illustrate this truth by some further examples. When we hear a sudden loud noise, the shock of it irresistibly

throws the attention outward, to an event in the surrounding world; and we may suppose that even a new-born babe is vaguely conscious of the external event, or of the external event together with his own internal commotion, rather than of an unlocalised 'experience'. No thinking, no discourse of reason, is needed to give him this objective datum; his own innate instinctive tendencies are sufficient.

When I look at a round-topped table at which I am seated, and owing to my position the visual sense-datum (*i.e.*, what *would* be a datum if I attended to it) is oval, I may be and in fact ordinarily am unconscious that the table is anything but round. A round-topped table is my datum. What is the explanation of this? One side of the oval is seen at a greater distance than the other—for the distance of things away from me, or, to be exact, their position in space (since I do not see myself), is a part of the datum: and such an oval table-top with one side farther away than the other is the *equivalent* of a round table-top. It is a round table-top seen from a certain point of view. In other words, what the intellect seizes when I see the table in this way, and when I look down upon it from above, is the same object in a different relation to myself: and it is this complex idea that is the datum of my experience.

An analogous case is that of seeing a man at various distances. Suppose he is coming toward me. I am conscious only of the man, and of the same man; I am not aware of those changes of size which are so obvious in the sense-datum. On the contrary, I see throughout a man of the same size. How is this possible? Because what I really see is a man constantly changing his relation to myself, or, to speak exactly, his position in space. This complex fact is the true datum of my experience.

Once more, I see objects as *solid*. Though visual sense-data are only surfaces—often curved and variously tipped and bent, if we count in distance as visual—yet what the intellect seizes is a solid, and this only is the datum of visual experience. Of course education plays a large part here; but the point is that there never was a time when we perceived merely surfaces; from the outset we reacted as to solid objects, and solid objects were therefore the data of our experience.

While, then, in perception we overlook the sense-datum as such, we do not, so to say, leave it behind: as if the intellect passed beyond it and seized something entirely different. No—the qualities of the sense-datum become qualities of the object, and they are a part of that which we seize;

but they are supplemented, externalised, and transformed—for instance, a given sensible bigness, corresponding to a certain area on the retina, may serve for the apprehension of objects of many different sizes, according to their distance away—so that the datum may quite justly be described as a new creation. Moreover, the different senses co-operate: sight, hearing, touch, and smell may make their several contributions towards *one* object in *one* space, as in the case of the dog. There could not be a better proof than this fact of the several senses that qualified objects are data of the intellect.

Mrs. Stephen, then, is quite right that qualified objects are departures from the facts of sense. And I grant her that, simply as data, they are unreal, while the facts of sense are real. But she is wrong when she suggests that the facts of sense are data at the moment, and that the data of experience are these sense-data, and not qualified objects. This is that 'psychologism' which I referred to above. There could not be a greater falsification of experience. And when this is made the basis for discrediting common sense and science; when we are told that we must not believe in dogs and babies, at least as bodies, and that much less must we believe in atoms and electrons—except as practically useful ways of synthesising phenomena—it is time we should protest, and point out where the fallacy lies.

II.—THE REALITY OF OBJECTS.

The ordinary man not only experiences dogs and babies, he believes that they are real. In what does this reality consist?

It cannot simply mean that he experiences them; for he experiences other things, such as illusions and dream objects, which he regards as not real. It cannot mean that the things he experiences have a definite character, independently of the fact that he experiences them; for illusory and dream objects have a definite character, and yet they are not real. This definiteness of character—which such an object as a centaur possesses—is only logical being, it is not existence. Nor can it mean sensible vividness, for illusory and dream objects may have that; such reality is only the reality of our sensations. It cannot, then, be anything internal to the datum at all: for definite character, the fact that it is experienced, and perhaps sensible vividness, are all that there is of the datum.

It remains, as the only possibility, that this reality is a

relation between the datum and something else. But how, on the principles that Mrs. Stephen has thus far set forth, is it possible that we should think of such a relation? If whatever goes beyond the datum is abstraction and fiction, the delusive work of the intellect, it is plain that we cannot. The thought of such a relation implies a further term; to think of this further term—since it is further, in the sense of additional to the total datum—we must have something in the datum, perhaps an image, that points to or means it; but this involves a distinction between that in the datum which means and that beyond the datum which is meant—in short, a function of transcendence. For instance, the reality of a table which you see might mean the possibility of touching it, and then your tactile image would stand for the tactile sensation which you might have; or it might mean that there is a real table (of as yet undetermined nature) outside you, and then your visual sensation would stand for and enable you to cognise this real table. Mrs. Stephen, however, admits no function of transcendence. A thing thought of, for her, is no other than the thought of it. And she is therefore obliged by her principles to find reality within the datum. How does she do it?

She does it by the heroic hypothesis of what she calls "virtual knowledge". *Really* we are aware of the whole world; but a veil is drawn over most of it by our practical habits of mind, our bodily interests. The datum seems a little thing, a mere part, but it has no determinate boundaries, and it really extends on indefinitely to the utmost limit of existence. There is nothing in the world that is not really a part of your immediate datum. For the whole world co-operates to give it to you, and is present in the datum unseen.

(1) We must ask first whether Mrs. Stephen is entitled on her principles to this extension of experience. She has asked us hitherto to describe experience exactly as it is, and not to falsify it. Her objection to qualities and objects has been that, when you examine experience closely, you cannot find them. Now she asks us to make an immense extension of experience, and to believe—what no observation, surely, would ever justify—that it is a part of the datum. This is an enormous assumption, and the introduction into her system of an entirely new principle, that of transcendent knowledge.

To what, on her own principles, is she strictly entitled? For we cannot say that she is not entitled to the *thought* of a world; that thought is one of our commonest data. She

is entitled to that thought. When you see a table, you can think of your possible tactile sensations, but you cannot intend them—you cannot believe in any actual future experiences, or indeed in any actual future at all, for that would be to transcend your present experience. Or rather—for one must constantly catch oneself up in this philosophy—you can believe, but *your belief will not be true*. That is, you can have the state of belief in your mind, but you must beware of supposing that there is, or rather will be, a real object corresponding to it; these real objects being abstractions from immediate experience made by the intellect, and fictitious. I leave it to the reader to say whether such an analysis does not contradict itself.

Mrs. Stephen, then, is entitled to possible or, to use Mr. Santayana's better term, eventual perceptions as present thoughts, but not as previsions of the future laying any, even a hypothetical, claim to truth. This is the logical outcome of her first principle, the restriction of our view to immediate experience; from which she can rescue herself only by retracting that condemnation of the intellect, as a faculty that only falsifies, and admitting that some intellections at once take us beyond experience and tell us the truth.

Perhaps I may seem to the reader to have been unduly severe, in condemning her so roundly for doing what we all of us do, namely, assuming that the world is a great deal larger than our momentary experience. My point is merely that, when you do this, you should recognise that you are putting in a claim to the transcendence of knowledge; it is one thing to transcend with your eyes shut, and in complete unconsciousness that you are transcending, and another to do so with your eyes open. The nature of the extension which you make will be different in the two cases. However, let us allow Mrs. Stephen to have her world, and see what she makes of it.

(2) Granting, then, the propriety and necessity of passing to a world, the nature of the world you assume will depend on what it is an extension of. There are three possibilities: that what you extend is (a) physical things conceived as real; (b) data as such, which we have seen to possess no internal reality; (c) those facts of sense, or states of our sensibility, by means of which we apprehend data. Now here I find in Mrs. Stephen's conception of "virtual knowledge" a deplorable ambiguity. I think she really attempts to extend all three of these things, though the first much less obviously than the other two.

What the ordinary man extends, that from which he passes

to his world, is evidently physical things conceived as real. If we think of a world at all, it is because we see men and animals, the walls of the room, the earth, the sky, all of which we conceive as independent in their existence of our perceiving. But Mrs. Stephen does not believe in any such independent existence of the physical; even the continuous space in which we *seem* to move about is not real; whatever is physical is only a false construction of the intellect. With that, she dismisses as unreal and illusory all those apparent existences that first suggested to human beings the thought of a world, and upon which the belief in it is founded. And yet she continues to believe in a world.

I have argued in a previous article that if we assume real things corresponding to the data of experience but not identical with them—things *having* these essences, but not the essences merely as given—the principle of the adventitiousness of knowing gives us a certain warrant for supposing, though not a rational proof, that they exist continuously; and the continuous existence of many different things would give us a world. In that case the ordinary man would be right. Mrs. Stephen, however, has denied herself any such outlet to a world by condemning objects as false abstractions.

What she means to extend is, of course, the data of experience as such. But this commits her to the view that the other parts of the world are still data. Now I persist in thinking that perception (the mode of experience we are talking about) is an animal function, and givenness one of its characteristics; and that when you pass away from animals to things existing unperceived, you have no more right to think of them as still given than you have to say that they are still perceived, which would be an open contradiction. Her thinking of them as given is the result of a confusion between givenness and that sensuous nature which belongs to states of our sensibility—between the sign-using function by which essences are given and the states which are used as signs: for we have seen that data, for her, really means states of our sensibility.

Now since data, empirically, are always not simply data but data to me (or some one else), she is bound in strictness to hold that the outlying parts of the world are not only data but data to me. And she recognises this logical obligation. For she tells us that *really* there is nothing anywhere, or at any time (except perhaps in the future?), that is not given to me—that my immediate datum contains the whole of reality; only a veil is drawn over most of it by my practical

interests, my exclusive occupation with the needs of the body. The "virtuality" of the knowledge consists in this veiling. But I think we are nowhere given a literal and intelligible account of the *modus in quo* of this veiling: the metaphor of the veil is allowed to cover what it would be difficult, or perhaps inconvenient, to explain in clear language. Indeed, if explanation is falsification, perhaps this philosophy is true to itself in refusing to explain.

But let us see what this philosophy is committed to in holding that the world at large consists of data. This means, in the concrete, that all the different sizes of a man as seen at different distances exist when we do not see him; that all the different shapes of a table as seen from different angles, as well as all the different contacts which you might have by touching it in various ways, coexist in external reality, even when no one is seeing or touching the table. It is easy, if one does not think out exactly the meaning of one's ideas, to fancy that these externalised essences still form a continuous world—in fact, to equate this world with the world in which the ordinary man believes. But it is evident, the moment one considers the matter, that the different sizes of the man or shapes of the table cannot be combined into a consistent object; and that the only course for the phenomenalist is to desist from uniting them physically, and be satisfied with synthesising them logically, as Mr. Russell has done with so great success. The question will then remain whether such a multitude of discrete phenomena bound together only by logical relations, can properly be called a world; and I am happy to see that Mr. Russell, with his characteristic perspicacity, denies that there is a world.¹

Mrs. Stephen, however, as we have seen reason to think, is not fundamentally a logician but a psychologist—at least, the things she is speaking of are states of our sensibility, or sensations, although she mistakenly calls them data. Let us then consider this alternative interpretation of her doctrine, according to which the world at large consists, not of data, but of sensations. I have, of course, the greatest sympathy with this view, which is indeed my own. But I think her unfortunate confusion of sensations with data, her notion that the facts of sense are the real data, perverts it and causes her to attribute to sensations things that are only true of data and to data things that are only true of sensations.

For instance, she tells us that the data of experience shade off imperceptibly into those ulterior data which are only

¹ See his Herbert Spencer lecture on "Scientific Method in Philosophy" (Oxford, 1914), pp. 4 ff.

objects of "virtual knowledge". But a datum cannot shade off into anything else: there is no half-way position between what is a datum and what is not a datum. (Of course she softens the breach by holding that the ulterior facts are also data; but we have seen that this is not true, at least they are not data to me, which is what would be required to heal the breach.) What she really means is that our sensations shade off by imperceptible degrees into sensations that are not ours—or that there are various degrees of clearness in the sensations that are ours. Continuity is possible in the world of sensations but not in the world of data; your data, for instance, cannot be continuous with mine.

Contrariwise, she tells us that the real world, the world of fact, is characterised not only by continuity (the type of which may be seen in the continuity of space and time), but by "interpenetration". It seems to me that this favourite Bergsonian term covers a number of heterogeneous ideas: physical action at a distance, the transcendence of knowing, the confused state of sensations that are really distinct but which our attention does not distinguish. But so far as the thesis rests on immediate observation, Mrs. Stephen is transferring to the real world what is true only of data. For that givenness to a single glance, that mutual involvement of parts, which has long been known under the name of the "unity of consciousness," is something characteristic only of the datum, and not transferable (as I think Kant pointed out) to the sensations by means of which it is given, *i.e.* to the self that has the datum.

Suppose, for instance, you look at the visual field. It contains a vast number of details of which you are not separately conscious—of colours, and relations between colours, which are only *petites perceptions*, if they are perceptions at all (which I very much doubt), but without the presence and psychic existence of which you would not see the total field. These are not elements of the datum: if you mean by the psychic the datum exactly as it is, they are not psychic, and you are justified in denying their psychic existence; but beware of denying that they are actual sensations, or you will put it out of our power to see! What we see with, but are not aware of—that is what I mean by the psychic, and my contention is that it is indefinitely multiple *and contains no unity*. The supposititious unity (if unity is the right word) is solely in the datum; the sensation is as genuinely made up of parts as the brain-process it accompanies. Indeed, in my view it *is* the brain-process (or an extract from it).

But the psychic, it will perhaps be replied, essentially

involves that *oppositeness to me* which is so evident a characteristic of the datum. Not at all, I answer; it only involves the *illumination* which we find in the datum, and the oppositeness is entirely brought about by our use of the sensation as a sign; it is something superadded to the psychic by the way we act. Now the reality of the sensation is the reality of ourselves; and we are creatures that have come into existence by evolution out of the existences that constitute the world at large: hence we may justly argue that the world at large consists of sensations but does not consist of data.

But, granting that this is what the world really is, why should it not be adumbrated by the physical? Why must physical facts necessarily be constructions in the void, fictions, and why may not they be apprehensions by one part of the world of sensation of another part? If the world is multiple, and we are beings who have to live in it, would it not be very useful to us to get into relation to our opposites and competitors; and how could this be managed more cheaply than by the use of the sensations which compose us as signs? For example, when we see a baby and hear it cry, there would be outside us another group of sensations—not accessible by any such “dilatation” of our consciousness as Mrs. Stephen imagines—of which our own visual and auditory sensations are the revelation; in this group of sensations, besides those that might be seen as a brain, there would be others that might be seen as a stomach; and this would explain why we make haste to supply the child with food. But I must remember that any such thought of children and food is “explanation,” by which we falsify the simple purity of “fact”.

I will not ask Mrs. Stephen whether she lives by her philosophy, or reserves it for the closet after the manner of Hume. But I find traces even in her philosophical moments of a not wholly extinguished belief in the reality of the physical. When she says that abstractions are made and experience falsified for the sake of “practice,” what precisely are we to understand by practice? I should fancy that a person could not practise, or preach either, unless he had a body. But bodies, like other physical things, are, on Mrs. Stephen’s principles, false: so that it is by using your false body that you falsify. This is like the Cretan who lied that he lied. There is an easy issue out of the dilemma, if we consider that among the sensations just beyond the border of my waking self there is a group, that might be perceived by me or by any one else as a heart, a circulatory system, and muscles, and that it is the action of this group that Mrs.

Stephen refers to as "practice": in other words, that these particular perceived objects, at least, are not fictions but fact. But it is evident that she would then be obliged to take back into her confidence the whole physical world, and to repose the same faith in its reality that is felt by the ordinary man.

I may point out to her that it would really be worth her while; for she would get back the unconscious self that psychologists are so busy exploring. She would get it back, not as mere ulterior data, but as a real organism with habits and instinctive tendencies, which I take to be precisely the sort of thing that is needed to explain (*sit venia verbo*) psychic maladjustment. And I would observe that, as she does less than justice to the reality of matter, so she does less than justice to the reality of the self, when she suggests that the 'I' is nothing real apart from the data of experience. The 'I' is that to which things are data, and without which, consequently, there would be no data; it is therefore as real as anything can be. Of course I agree that it is nothing real apart from *sensation*.

To sum up this discussion of the reality of objects: in omitting *belief* from her analysis of experience, as an element additional to data and not internal to them, *belief that these data reveal reality*, Mrs. Stephen has herself mutilated and falsified experience. Nor can this belief be interpreted in a phenomenalist way, as merely the expectation of other possible sensations. If I see a baby, my belief in its reality does not mean merely that I imagine I could touch it, or that I think the baby may cry; it means that there is a real baby there, with sensations as actual as my own, and with a real stomach to which some of these sensations may be traced. But, once you admit the stomach, you have got to go further and admit food for it, and cows, and pastures, and the whole fair extent of things. And so we get back again to the world of common sense.

III.—THE VALIDITY OF KNOWLEDGE.

I have entitled this paper "A Vindication of Common Sense," but I should not have achieved my purpose completely if I did not reply to an objection that is sure to be urged by our contemporary phenomenalist, and which indeed constitutes the gravamen of their charge against common-sense realism: the objection, namely, that, if nothing is ever given except data, and if real things are objects of mere belief, we can have no valid reason for supposing that the real things

resemble the data ; and that they are therefore "unknowable things in themselves" or "something I know not what". This, of course, is the line of reasoning upon which Kant founded his agnosticism ; and, as the Kantian reasoning is supposed never to have been refuted, far the greatest part of the philosophers of our time are agnostics, if they are not even phenomenalists or deniers of the transcendent.

The first suggestion of a reasoned reply to this agnosticism is due to the penetrating vision of M. Bergson ; and I am happy, here at last, to be able to agree with him, though I shall find it necessary to state the reply in somewhat different terms. M. Bergson's doctrine is that in "intuition" we have inner access to the heart of reality, and are able to apprehend it as it is in itself. I believe this doctrine to be substantially sound, and to represent an advance in philosophy of the first importance. We do truly feel our own inner being, and when we think of ourselves as sentient beings, and of the sentience as real, we are not deceived.

But M. Bergson's doctrine of intuition seems to me to be vitiated by the equivocation, which we have already seen to exist in his thought, between the data of experience and sensations. If my criticism of this has been correct, it is an error to think of the world as composed of data, or as one great datum the parts of which interpenetrate, and the only way in which we are justified in conceiving it is as a continuum of sensation. It is an error to think of the outlying parts of the world as the object of "virtual" knowledge ; whenever we have any knowledge of them at all, the knowledge is actual. Contrariwise, it is an error to think of the part of the world which is ourselves as actually or, as Mrs. Stephen repeatedly phrases it, "directly" known ; the self, or ego, is precisely the part of the world which is *not* known at the moment, for the excellent reason that it is then engaged in knowing other things. We do not, then, and cannot, intuit our own existence at the moment ; and if intuition is to serve the purpose of refuting agnosticism, it must be differently conceived.

The conception I would substitute for M. Bergson's conception of intuition is that of *introspection*. At the moment when they exist, our sensations are not introspected ; and yet they are existent, and in a certain sense present (that is, physically and psychologically near at hand), ready to be cognised if we choose to turn our attention to them. This presence, this existence as the media of visual and other perception, is the true "virtual knowledge". But it takes retrospection to turn it into actual knowledge : you cannot be

aware of the sensations you used in seeing, hearing, etc., except subsequently.

Now we come to the main point, the nerve, of this reply to agnosticism. Introspection, if it is retrospective, can only be the use of a present image, or perhaps sensation, to bring before the mind as a datum a sensation that has just gone. The image or sensation used will of course be as exact as possible a repetition of the sensation introspected. But, since givenness consists only in conferring oppositeness upon a sensation that was illuminate already (for it enabled us to see), the datum brought before the mind will have not only the illumination which is a character, or rather the essential being, of the sensation, but also, to the extent that it is an exact repetition, even the concrete qualities that belonged to the sensation. That is, it will have qualities which we must conclude to belong somehow to the sensation, since there is no other source for them. We may say, then, that introspective knowledge shows us the sensation as it is.

I am going to make a particular application of this theory, which I think carries more conviction than a bare abstract statement. One of the characters of our visual data is space—extension. that is to say, in two dimensions. Now, on the theory that data are given by the use of a sensation as a sign, this character of extension must be present in the sensation if it is to be given in the datum; and, indeed, we find it there when we introspect the visual sensation. But this sensation is the part of the real world that appears to us when we perceive (an extract from) the brain-process; in just the same way that the sensations constituting the baby are the part of the real world that appears to us when we see its cheeks and hands. We have here a proof, therefore, that one small part of the real world at least is characterised by space. If we consider, however, that space in the brain-process is the same sort of thing as space on the retina, and that space on the retina is the same sort of thing as space in the external world, we see that this internal space of the sensation is a fair sample of space everywhere: and we have the desired proof that, in so far as we see things to be spatially extended, we see them as they are. Indeed, it would be a strange thing if evolution had brought forth a subjective figment to serve as our means of cognising objective space, when it might so easily use for the purpose a portion of that space itself.

The ordinary man, then, is not wrong in thinking that the world is really spatial; and physicists, when they make their exact measurements, and tell us that it takes eight minutes

for light to come from the sun or that the stars are so and so many light-years away, are giving us accurate information about what really exists. And if philosophers tell us that this is not so, and that the world is really an entirely different kind of thing, this is perhaps one reason why their explanations are not listened to with as much respect as they were formerly. For my part, I am content to throw in my lot with the men of science and the ordinary man.

IV.—THE DUAL RÔLE OF THE MIND IN THE PHILOSOPHY OF S. ALEXANDER.

BY MARY WHITON CALKINS.

ALEXANDER is prominent among realists for his concern with the place of mind in the universe. But throughout his writings he has assigned to mind a double part, now as an *experiencer*, again as a *spatio-temporal reality*. This paper briefly sets forth both conceptions, challenges their compatibility, and argues for the rejection of the latter. It is mainly based on Alexander's systematic presentation of his doctrine in his Gifford lectures, *Space, Time and Deity*, but makes occasional reference also to his earlier papers.

I.—THE TWO CONCEPTIONS OF MIND.

The first appearance of minds in *Space, Time and Deity* is as "finite things" which "experience," or "know," or "are aware".¹ With perfect definiteness Alexander disavows all atomistic or impersonalistic conceptions of Mind.² Thus, he says: "Even in sensation it is we who have the sensations";³ and he deliberately though regretfully rejects E. B. Holt's "so simple" and persuasive doctrine of consciousness as "neutral cross-section" on the ground that it "fails to account for a vital feature in the cognitive situation, as we experience it, namely, that in being aware of the fire, the fire is before *me*, or it is *I* who see it, or it is in a sense *my* fire."⁴

It is evident that Alexander here implicitly yet definitely attributes to the mind individuality. He has already de-

¹ *Space, Time and Deity*, vol. i., p. 52. All undesignated references are to this book.

² I have found, however, two retrogressions into the conventional phraseology of the Humian doctrine of mind. The first is the statement, "Our mind is experienced by us as a set of connected processes . . . possessing the quality of mentality" (*op. cit.*, vol. ii., p. 42). In the second (*ibid.*, p. 81), the mind is described as "the substantial continuum of certain processes which have the conscious quality."

Op. cit., vol. i., p. 105².

Op. cit., vol. ii., p. 111². Cf. May Sinclair, *The New Idealism*, p. 197.

scribed the mind as permanent, saying simply: we are conscious of "ourselves as permanent amid our changes," in other words, "our mind is," in its awareness of itself, "a substance".¹ But the emphasis in every description of mind falls on its function, experiencing.

Experiencing, or awareness, by which minds are thus distinguished, is classified by Alexander as of three main sorts, differing with the nature of that which is experienced. The mind "contemplates" external things, "enjoys" itself, and is "assured" of other minds. The paragraphs which follow summarise his account of each of these types of awareness.

(1) In contemplation the mind is related to external things. Alexander describes this relation as "mental act" or as "conscious response to some non-mental existent."² As action or response, he treats contemplation as a form of conation.³ Two factors of this conception receive special emphasis. Mental action, in the first place, "is something mental and not merely physiological."⁴ By action, in the second place, as Alexander is at pains to explain, he does not mean merely "the special activity which is felt in certain mental processes or acts, like desire or endeavour or willing."⁵ On the contrary, mental action "in this usage . . . includes passive acts of sense as well as activities of volition";⁶ conation is, in fact, a synonym for attention in Ward's use of the term.⁷ It follows, of course, that cognition is a form of conation—it is, in fact, the kind of conation which issues in the movements "sustaining our attention" to an object.⁸

(2) From contemplation, Alexander carefully distinguishes the form of experience which he knows as enjoyment. "The mind," he reiterates, "enjoys itself and contemplates its objects." The term 'enjoyment,' he explains, is used in a technical sense "undoubtedly at variance with ordinary usage"⁹ to indicate the mind's awareness of itself or of its acts. "I am aware of my awareness," he says, "as I strike a stroke or wave a farewell." My awareness and my being aware of it are identical. I experience the tree as I strike a man or wave a flag. I am my mind and am conscious of the object. . . . "Enjoyment," Alexander expressly notes, must "include suffering or any state or process in so far as the

¹ *Op. cit.*, vol. i., p. 29². Cf. vol. i., pp. 270, 276, and vol. ii., p. 116.

² *Op. cit.*, vol. ii., p. 117².

³ *Ibid.*, pp. 118² ff.

⁴ *Ibid.*, p. 121².

⁵ *Ibid.*, p. 118².

⁶ *Ibid.*

⁷ Alexander cites J. Ward, *Psychological Principles*, ch. iii.

⁸ *Ibid.*, p. 120. Feeling, also, after discussion, Alexander describes as "an independent act" (*ibid.*, p. 125).

⁹ *Ibid.*, vol. i., p. 12².

mind lives through it".¹ In a word, enjoyment is introspection, "observing our own minds";² and "what I introspect is the processes of imagining and thinking or remembering or perceiving."³

(3) Besides the contemplation of external things and the enjoyment of ourselves we have, Alexander teaches, a third form of experience, the "assurance," or acknowledgment, of other minds. Alexander nowhere carefully distinguishes assurance from contemplation and enjoyment, and the commentators have laid little stress on this third form of experience. But Alexander unequivocally teaches that we "have direct experience of the existence of minds in others,"⁴ an "original, fundamental awareness"⁵ of minds not our own; and he elsewhere suggests that "it may be doubted whether the inner life of the subject would be attended to for its own sake were it not that in the intercourse with other persons . . . we are thrown back upon ourselves . . . and we become definitely aware of ourselves as subjects of experience".⁶ This direct experience of other minds is not knowledge derived either from contemplation of the external or from enjoyment of ourselves. "We can enjoy only our own mind and not the mind of another"; and we do not contemplate the mind of another "as if it were an external object. Thus, I am not aware of B's mind as I am aware of his body. . . . Yet experience assures me that he has a mind. What sort of a mind . . . I am left to divine sympathetically—on the basis largely of analogy with my own. But that a mind is there, is assurance."⁷

To summarise Alexander's conception of the mind's experiencing: he recognises three main forms of experience, each distinguished by the nature of that which is experienced. These are, first, contemplation of external things—further described as activity of mind; second, assurance of other minds; and finally, enjoyment of one's own mind, in its contemplation, assurance, and enjoyment.

Up to this point, Alexander has appeared in the guise of a dualist. "The most striking classification," he has said, "of finite things is into minds on the one side and external things

¹ *Op. cit.*, vol. i., p. 12. Cf. vol. ii., pp. 89 ff., 116 ff. Cf. also *The Basis of Realism, Proceedings of the British Academy*, 1914, vol. vi., pp. 6 f.

² *Space, Time and Deity*, vol. i., pp. 17².

³ *Ibid.*, p. 18².

⁴ *Op. cit.*, vol. ii., p. 37².

⁵ *Ibid.*, p. 36².

⁶ *Op. cit.*, vol. i., p. 105². Cf. Alexander's conception of the "appreciations" of value as rising "out of intercourse between minds" (vol. ii., pp. 239 ff.). And cf. also what he says of experiencing God, *ibid.*, vol. ii., p. 348.

⁷ *Op. cit.*, vol. ii., p. 37².

on the other."¹ He has, it is true, from the first taught that the relation between mind and object is merely this "that they are together or compresent in the world";² and from this identification of knowing with compresence he will later deduce that the mind is simply an existent "amongst others".³ But he has so far been mainly concerned to describe the mind as experienter. He is not, however, content to leave the mind to play this part merely. Rather, he casts it for a second, a novel rôle. The mind becomes, in fact, a collocation of motions, belonging to the "highest level" of existence, and possessed of a new quality distinctive of this higher level, the quality of consciousness. It is obviously necessary to the analysis of this conception to understand, at least in outline, Alexander's metaphysical theory of the universe. This may be summarised mainly in his own words: "Empirical things, or existents, are," he holds, "groupings within Space-Time, that is they are complexes of motions, in various degrees of complexity".⁴ Time is the stuff of which existents are constituted. Any portion of it, any existent, possesses certain fundamental features, the categories (substance, causality and the rest), and also certain qualities, "non-pervasive," "empirical" features of things (such as colour and sound, or chemical process, life, consciousness).⁵ These qualities stand to each other in a progressive temporal relation; they "form a hierarchy the quality of each level of existence being identical with a certain complexity or collocation of elements on the next lower level."⁶ In more detail: "New orders of finites come into existence in Time; the world actually . . . develops from its first or elementary condition of Space-Time which possesses no quality except . . . the spatio-temporal quality of motion. But as in the course of Time new complexity of motions comes into existence, a new quality emerges, that is, a new complex possesses as a matter of observed empirical fact a new or emergent quality. . . . The emergence of a new quality from any level of existence means that at that level there comes into being a certain . . . collocation of the motions belonging to that level, and possessing the quality appropriate to it, and this collocation possesses a new quality

¹ *Op. cit.*, vol. i., p. 5². Cf. *The Basis of Realism*, p. 4²: "Minds and physical things are two great classes of existences".

² *Space, Time and Deity*, vol. i., p. 11².

³ *Op. cit.*, vol. ii., p. 103³.

⁴ *Op. cit.*, vol. ii., p. 45.

⁵ It is to be noted (1) that motion is described as both category and quality (*op. cit.*, vol. i., p. 321); and (2) that Alexander speaks sometimes of a hierarchy of qualities and again of a hierarchy of existents.

⁶ *Op. cit.*, vol. ii., 428³.

distinctive of the higher complex."¹ Thus, "physical and chemical processes of a certain complexity have the . . . new quality of life . . . and therefore life is at once a physico-chemical process and is not merely physical and chemical."² And higher than the living thing with its quality of life, is the mind, that collocation of motions endowed, not only with physical and chemical qualities and life to boot, but also with consciousness, the last and highest of the empirical qualities known to us.³

II.—OBJECTIONS TO THE SPATIO-TEMPORAL CONCEPTION OF MIND.

From the statement of Alexander's two conceptions of the mind we turn to the questions: are they tenable conceptions? and are they compatible? The doctrine of mind as a conscious, enjoying, contemplating being Alexander seldom seeks to justify: he rests his case simply on the reader's introspection. Nor does he argue the temporal nature of mind: "It is admitted," he declares, "that mind as experienced is in time".⁴ But he sets forth in detail his reasons for describing mind as spatial, "My mind," he says, "is for me . . . spread out or voluminous in its enjoyment. Within this vague extension or volume the separate mental acts stand out as having position and 'direction'. My mind is streaked with these more pungent processes, as when a shoot of painful consciousness is felt or a sudden thought produces a new distribution in this extended mass."⁵ The opposition to the proposition, that "mind . . . is extended," arises, Alexander believes, "from the mistaken belief that a spatial mind must be apprehended like a spatial physical object. This, however," he proceeds, "would be to imagine that the mind is asserted to enjoy itself in contemplated space, whereas the assertion is that mind enjoys itself in enjoyed space."⁶

¹ *Op. cit.*, vol. ii., p. 45. For an earlier formulation of this doctrine, cf. *Proceedings of the Aristotelian Society*, 1910-1911, p. 15, where Alexander refers to "consciousness, a new and remarkable property of what is in reality a physical thing".

² *Op. cit.*, vol. ii., p. 46².

³ *Op. cit.*, vol. ii., p. 61². Cf. *The Basis of Realism*, p. 11⁴: "Mind or consciousness is a new quality of existence and that which has mind is a new creature existing at a higher level than physical or even living things." Alexander vibrates between the description of (1) mind as an existent, or thing, possessed of the quality of consciousness and (2) mind as itself an emergent quality. Cf. *Space, Time and Deity*, vol. ii., pp. 39², 45, 50¹, 67².

⁴ *Op. cit.*, vol. i., pp. 97² f.

⁵ *Ibid.*

⁶ *Ibid.*, p. 97².

This is of course nothing less than an appeal to introspection for justification of the spatio-temporal conception of mind. And, to the writer of this paper, the assertion that the mind is voluminous, spread-out, or extended is utterly meaningless, except as a metaphorical statement of the complexity or comprehensiveness of mind. Lakes and roads and trees and human bodies are spatial; but the perceiving, thinking, feeling, willing self is not spatial, though it is indeed complex, manifold, variegated. That it is really this complexity of the mental life which Alexander experiences when he believes himself to enjoy the extension of his mind, is suggested in the passage quoted above. Pungent processes of pain and sudden thoughts may indeed be said to "streak" the mind but they are not related to each other as right hand is to left or horizon to foreground. Alexander would of course object to this criticism that the space of pain and thought is enjoyed whereas that of hands and landscape is contemplated. But this retort presupposes a qualitative difference between consciousness-as-enjoyment and consciousness-as-contemplation whereas, as we have seen, Alexander really differentiates the two forms of experiencing merely as the one is 'of' the mind and the other 'of' external things. Accordingly, far from assuming that the objects of enjoyment are spatial Alexander ought, it would seem, to describe them as unspatial, in order to justify his distinction of enjoyment from contemplation.

The fact that Alexander does not rest content with the mere attempt introspectively to establish the spatial nature of mind perhaps points to his own dissatisfaction with it. Dropping the appeal to introspection, Alexander, with a bewildering *volte face*, argues the spatialness of mind from its connexion with the body. "My mind," he now says, "is somewhere within my body or within my head. . . . I localise my mind in Space by recognising it as occupying the same place as some physical object."¹ In this statement the distinction between space enjoyed and space contemplated disappears; and mind, regarded as 'within' the head, is frankly conceived as a neural entity. This becomes more evident as Alexander goes on to argue, in the first chapter of Book III., for the spatio-temporal conception of mind. "Experience," he says, "leads us on to connect our mental processes with our body . . . and more specifically still with a certain part of our brain and to localise our mental processes in the same places and times as certain nervous

¹ *Op. cit.*, vol. i., p. 101¹.

processes. . . . We are forced, therefore, to go beyond the mere correlation of the mental with these neural processes and to identify them "to accept "as an empirical fact, that a neural process of a certain level of development possesses the quality of consciousness and is thereby a mental process."¹

With this argument, however, Alexander must yield all claim to a psychologically justified account of mind in terms of Space-Time. The identification of neural and conscious process far from being what he calls it an "empirical fact" is at best a deduction of identity from causal connexion. There is indeed no basis in experience for this identification of neural, or physiological, with psychical fact. "Seeing red," for example, does not as a matter of observation mean precisely what is meant by "this occipital-lobe process" or "this neural process"; in other words, the one phrase is not replaceable by the other. True, the two facts are closely related with each other; the psychic fact is, very likely, conditioned by the physiological. But this correlation of the two sets of facts is all that Alexander ever proves.² And correlated or connected facts are not identical. The waitress's "Dinner is served" is connected with my eating my dinner but is not identical with it; the sound of the bell is correlated with my entrance into my class-room, but bell-ringing and door-opening are two events, not one. Similarly, the alleged identity of mental process with nervous process, from which Alexander argues the spatialness of mind, turns out to be an invalid inference of identity from correlation.³

This criticism of the spatio-temporal conception of mind, as psychologically unjustified, obviously implies as its corollary that this doctrine of mind as "collocation of motions" and of consciousness as "spatio-temporal quality" is wholly unrelated to the doctrine, equally emphasised by Alexander, that the mind is a contemplating or enjoying self. One is tempted indeed to conclude that Alexander holds the two views, side by side, in closed compartments of his mind or (to change the figure) that he works the two views as it were by day shift and night shift, one out of the way while the other toils.

The preceding pages have chronicled the failure of Alexander's efforts to establish, either introspectively or by

¹ *Op. cit.*, vol. ii., p. 5.

² *Cf.* the passage quoted in the preceding paragraph.

³ A clear statement of the position taken in the preceding pages will be found in J. S. Moore's *The Foundations of Psychology* (Princeton University Press), pp. 38 ff. (in criticism of behaviourism).

appeal to nerve physiology, his conception of mind as spatio-temporal. There remains, however, the possibility that the mind, thus realistically conceived, is the ultimate reality of which mind, the experiencer, is but appearance. In a word it may be urged that the mind, as spatio-temporal, is the object not of immediate observation but of metaphysical inference. This hypothesis, it is true, stands opposed to Alexander's constant claim that he bases his philosophy on psychical fact and to his emphasised teaching that just because "our minds are so directly open to our own inspection . . . the study of mind" is of "special importance and value for philosophy".¹ None the less it is incumbent on us to supplement our psychological criticism of the spatio-temporal conception of mind by scrutiny of the inner consistency and the metaphysical implications of the doctrine.

We shall dismiss with mere mention some of the justified criticisms of Alexander's metaphysical system, on the ground that they are beyond the restricted concern of this paper. Such, for example, is the criticism that Alexander's basal doctrine ("Space-time is the stuff of which all existents are constituted") presupposes a refutation of idealism which he nowhere accomplishes and only incidentally undertakes,² and the more specific charge that he never proves, what he so vehemently asserts, the spatio-temporal character of substance, causality, and the other categories. But the grave contradictions inherent in the emerging-quality doctrine³ bear directly on Alexander's conception of mind.

According to this theory, it will be remembered "The higher quality emerges from the lower level of existence and has its roots therein, but it emerges therefrom and it does not belong to that lower level, but constitutes its possessor a new order of existent with its special laws of behaviour".⁴ The two contrasted aspects of this doctrine must be emphasised. On the one hand, Alexander teaches that, "each new type of existence when it emerges is expressible completely or without residue in terms of the lower stage, and therefore

¹ *Op. cit.*, vol. i., p. 82.

² Judged by his procedure, Alexander holds that idealism is refuted if one can show that secondary qualities are "on the same footing" as primary and if one can offer a realistic explanation of illusion. It is, however, probable that Alexander who holds with the naïve realist that "my experience declares the distinct existence of the object as something non-mental," hardly considers the necessity of refuting idealism. (*Op. cit.*, vol. i., p. 163. Cf. *The Basis of Realism*, pp. 5, 7 f.)

³ The conception is suggestive of the Aristotelian teaching of *δύναμις* as related to *ἐντελέχεια*.

⁴ *Op. cit.*, vol. ii., p. 462.

indirectly in terms of all lower stages; mind in terms of living process, life in terms of physico-chemical process, sense-quality like colour in terms of matter with its movements, matter itself in terms of motion".¹ But with equal rigor Alexander insists that "a new quality"² emerges and that it "constitutes its possessor a new order of existent".³ Now these two factors of the theory involve a plain contradiction. An existent which is "expressible *completely or without residue*"⁴ in terms of a lower order of existence certainly has nothing "new" about it. So, if the coloured object were in truth expressible completely in terms of matter and motion there would be no colour, but matter and motion only; if the living thing were completely reducible to physico-chemical process then life could not be a new quality; and finally, if mind were expressible without residue in terms of living process it could not be true that "mind is a new quality distinct from life".⁵ Alexander, to be sure, hastens to say that colour is "not merely vibration," that life is "not merely physical and chemical" and that "the complex collocation which has mind, though itself vital . . . is not *merely* vital but *also* vital".⁶ But there is no saving magic in the qualifying phrase "not merely". What is not merely vibration is not completely reducible to vibration, and what is not merely vital is not expressible without residue in terms of life. Thus, the doctrine of the emergence of genuinely new qualities culminating in consciousness, the quality distinctive of mind, stands in flagrant opposition to the fundamental realism of Alexander, to his teaching that every existent is, ultimately, spatio-temporal. The truth is that Alexander has to accept, as he says, "under the compulsion of brute, empirical fact"⁷ the "emergence" of new qualities; that he observes the correlation of these qualities with phenomena of motion (vibrations, nerve processes and the like); and that he forthwith arbitrarily asserts the identity of each quality with the correlated phenomena of motion overlooking the impossibility of completely expressing the really 'new' in terms of anything except itself.

¹ *Op. cit.*, vol. ii., p. 67². Cf. May Sinclair, *The New Idealism*, p. 198.

² *Op. cit.*, vol. ii., p. 45.

³ *Ibid.*, p. 46².

⁴ *Italics mine.*

⁵ *Op. cit.*, vol. ii., p. 45, end.

⁶ *Op. cit.*, vol. ii., p. 46¹.

⁷ *Op. cit.*, vol. ii., p. 46². Cf. vol. i., p. 183. In *The Basis of Realism*, Alexander describes the fundamental proposition, or intuition, "that experience itself assures us of the existence of a mind, an object, and a relation of compresence between them" as "a fact which we are brought face to face with and accept as we accept a colour" (*op. cit.*, pp. 7² f). Cf. *Proc. Arist. Soc.*, 1910-1911, p. 4.

III.—THE INCONSISTENCY OF THE SPATIO-TEMPORAL CONCEPTION OF MIND.

The final section of this paper will set forth the inharmoniousness of Alexander's doctrine of mind, as spatio-temporal entity, with important doctrines which he himself holds. There are many incidental expressions plainly indicating that Alexander does not consistently and invariably seek to identify mind and body. He refers, for example, to the "union of mind and body,"¹ a phrase which would have no force if the mind were actually identical with part of the body; as has appeared, he teaches that "while mental process is *also* neural it is not *merely* neural";² and finally he more than once refers to the empirical uniqueness of consciousness.³ We are, however, concerned with more fundamental incompatibilities.

The first of these essential disharmonies is evident in Alexander's argument throughout. He has defined mind as collocation of spatio-temporal processes endowed with the highest of the emergent qualities, consciousness. But, as a matter of fact, so far from describing mind and consciousness in terms of space-time, of mass, or even of life, Alexander actually, as he over and over again insists, conceives the lower beings and qualities after the analogy of mind and consciousness. "The emergence of . . . consciousness from a lower level of complexity which is vital" is used "as a clue" to the hierarchy-of-qualities doctrine.⁴ "The world as a whole and each of its parts," he says, "is built on the model with which we are familiar in ourselves as persons, that is as union of mind and body."⁵ Accordingly, "Time is the mind of Space" and "Space the body of Time";⁶ and "everywhere . . . there is a body or material of the lower level of which one part is so complicated as to be endowed in fact with a new quality, which performs to it the office of soul or mind and may be called with proper caution its mind."⁷ But this description of the lower levels of existence each as the mind of the level next below it, certainly is incompatible with the doctrine that mind is itself reducible to existents of the lowest level. In other words, if the conception of the emerging qualities is, what Alexander specifically calls it, "an extension downwards made without concealment of what can be derived

¹ *Op. cit.*, vol. ii., pp. 278², *et al.*

² *Op. cit.*, vol. ii., pp. 87² ff.

³ *Op. cit.*, vol. ii., p. 38.

⁷ *Ibid.*, vol. ii., p. 68¹.

² *Op. cit.*, vol. ii., pp. 62^f. *et al.*

⁴ *Op. cit.*, vol. ii., p. 45.

⁶ *Ibid.*, vol. ii., p. 38. *Cf.* p. 67¹.

from considering mind" then it cannot be true that "mind and body do but exemplify . . . a relation which holds universally".¹ Rather, all other relations exemplify that between mind and body. To state this more plainly: Since Space-time, the fundamental reality, and all the finite existents below the level of mind are described by their analogy with mind then it is surely by a very vicious circle that mind is defined as "itself in the end a complex of Space-Time stuff".²

The conception of mind as spatio-temporal does special violence to a culminating doctrine of Alexander's metaphysics, his teaching of the tertiary qualities, or values. For the core of this doctrine is its conception of truth, goodness, and beauty as constituted by two factors; on the one hand, the appreciating or valuing mind, on the other hand, the internally or externally coherent object.³ Evidently in such a theory mind is not, as the spatio-temporal conception requires, the mere highest term in a series of coördinate finite existents, but is rather the subject outside the series of appreciated objects.

This distinction between mind and objects is, in truth, the clear implication of all that Alexander says of the tertiary qualities.⁴ "They are not," he insists, "qualities of reality in the same sense as colour, or form, or life. . . . Facts," which are real independently of mind, "are true only in relation to the mind which believes them. In the same way there is no goodness in a physical fact as a mere external reality; its goodness, say it is the fact that a wall is built, lies in the relation it has to the practical mind which wills it, to its being the honest work of the mason."⁵ Even in the case of "the beautiful object, whether of art or nature, one part is contributed by the mind".⁶ Obviously these statements lose all their meaning if the practical, willing mind, or the believing mind, is itself a mere "complex of

¹ *Ibid.*, vol. ii., p. 428.

² *Op. cit.*, vol. ii., p. 245².

³ It is unnecessary to discuss Alexander's account of value as it "exists below man as . . . the persistence of adapted forms of living being" (*op. cit.*, vol. ii., p. 308¹), for on the face of it this is to give to value a different meaning, and the coördination of the tertiary qualities with the values, in this new sense of the term, is by an arbitrary *tour de force*.

⁴ It is characteristic of Alexander to ignore this implication, at will. Such statements as "the mind is the highest finite empirical reality we know" and "mind is in the end a complex of Space-Time stuff" occur cheek by jowl with assertions such as "the tertiary qualities . . . depend on mind." (*Op. cit.*, vol. ii., p. 245².)

⁵ *Op. cit.*, vol. ii., p. 237. Cf. pp. 238³, 242 f., 274, 277.

⁶ *Op. cit.*, vol. ii., p. 291².

Space-Time stuff" like the wall, or the words, which are willed or believed.

This essential contrast between mind and object is stressed in all the detail of the tertiary quality doctrine. (1) It is emphasised, for instance, in the distinction between "true," "good," and "beautiful" as "satisfactions" of three "elementary" personal tendencies: "the desire to learn, the desire to do, and the desire to give expression to ourselves in outward form".¹ (2) It is heavily stressed also in the illuminating conception of the values as taking rise in social intercourse. "We only become aware," Alexander says, "that a proposition is false when we find it entertained by another and our own judgment disagrees with his. . . . In the same way and more obviously, my appreciation of a certain end or object . . . as being morally good arises in social intercourse which presents me with persons who have willed incompatible ends or who will ends . . . compatible with mine. . . . It is by this contrast between different ends and the wills for them that the appreciation of good and bad arises."² In a word, the tertiary qualities which "are as real as the primary or secondary . . . depend . . . on mind and are its creations through social intercourse".³ Evidently, the persons, willing compatible or incompatible ends and agreeing or disagreeing in their judgments, are by this theory essentially different from the objects which they judge and the ends which they will.

(3) This essential difference between mind and object is brought out impressively in the paragraphs in which Alexander seeks to fend off the imputation of idealism. "It might be thought," he says, "that to admit value to be the work of mind is to give up the case for believing colour and the other secondary qualities to be independent of it. This would be a misconception for the cases are not parallel. . . . For the colour in being judged beautiful is still seen as colour; its beauty is a character superadded to it, from its relation to the mind."⁴ We are here concerned not with the teaching that colour is objective but with the doctrine that values are the "work of the mind". For, though Alexander asserts throughout that beauty, like goodness and truth, is "a property of the object distinguishable from the act of the subject"⁵ he none the less teaches that "the value of the

¹ *Op. cit.*, vol. ii., p. 243³.

² *Ibid.*, vol. ii., pp. 239² f.

³ *Ibid.*, vol. ii., p. 245². Cf. p. 258¹.

⁴ *Op. cit.*, vol. ii., p. 244².

⁵ *Op. cit.*, vol. ii., p. 243 *et supra*. Alexander describes the "objective character in objects of value" as "coherence"; but he nowhere distinguishes the coherence of "the true" from that of the object which is good or beautiful.

object . . . is not something which is already in the things themselves, but is born along with the act of appreciation";¹ that values "belong to the object as it is possessed by the mind and not outside that relation";² that they are "not existent apart from the subject";³ that they belong to "the object of value" only "in so far as the valuing subject appreciates it."⁴ In a word, the tertiary quality doctrine, even in its most realistic aspect, presupposes the uniqueness of mind: it contrasts goodness, truth and beauty precisely as creations and inventions of mind from the primary and secondary qualities which constitute external objects. If the mind is, however, itself an external thing, a spatio-temporal existent or a collocation of motions or a complex of neural processes, then these contrasts disappear—the contrasts between fact and the believing mind which makes it true, between physical object and the willing mind which makes it good, between sense object and the artist mind which makes it beautiful. In a word, the conception of the mind as a spatio-temporal existent or a complex of neural processes, an external thing, at a stroke cuts away the foundation of this doctrine of the tertiary qualities.

The reader of this paper may be left to deduce for himself "the conclusion of the whole matter". It has been shown not only that Alexander fails in his ambitious purpose to make mind play the rôle of space-time complex in addition to its normal part of experiencer, but also that he constantly assumes the existence of minds in a sense other than "collocations of motion". But once it is realised that Alexander treats mind as an entity distinct in nature from space-time stuff, it is no longer possible to treat Alexander's doctrine as a seriously monistic realism. Two courses are then open to the critical reader. (1) On the one hand he may suppose Alexander simply to ignore self as experiencer and may take as sober truth Alexander's curiously frequent references to his doctrine as "hypothesis". When, for example, Alexander speaks of the "hypothesis that mind is one finite among others,"⁵ when he describes his theory "that the simplest being is Space-Time itself and that material things are but modes of this one simple being" as an "alternative hypothesis,"⁶ when he says that he is "assuming the hypothesis

¹ *Op. cit.*, vol. ii., p. 243². Cf. *The Basis of Realism*, pp. 22² f. with citations.

² *Ibid.*

⁴ *Ibid.*

⁵ *Space, Time and Deity*, vol. ii., p. 87². Cf. vol. i., p. 338¹.

⁶ *Op. cit.*, vol. i., p. 172². Cf. pp. 184, 189, and vol. ii., p. 4¹.

of direct apprehension of the external object "¹ or again when he "assumes" that qualities and relations are "correlated with spatio-temporal processes" and "in the end" themselves "spatio-temporal" "²—in all these cases, the critic may take Alexander at his word. He will then interpret the book as an intellectual *tour de force*, an intricately reasoned answer to the hypothetical question: If the mind *were* simply one finite existent among others, and if all things *were* modes of space-time, how could the universe be described? *Space, Time and Deity* is then from one point of view mainly an answer to this doubly hypothetical question.³ (2) If, on the other hand, the reader stresses the importance of Alexander's positive teaching of the mind as experienter, with its corollaries, the conceptions of value and of social intercourse, he must then read Alexander's system as a dualism, a conception of the world as made up both of spatio-temporal objects and of minds. Whether, so conceived, the doctrine can withstand the criticisms of idealists is a question beyond the scope of this paper. Such an interpretation of the book has, however, at least the advantage of leaving the reader free, with a good conscience, to profit by the keenness and subtlety of analysis and the richness of suggestion which distinguish Alexander's doctrine of the self as experienter.

¹ *Op. cit.*, vol. i., p. 95².

² *Op. cit.*, vol., i., p. 246².

³ It should be noted however, that, as this paper has attempted to show, *Space, Time and Deity* virtually discredits the first of these hypotheses and fails to establish the second.

V.—CRITICAL NOTICES.

The Principle of Relativity, with Applications to Physical Science.
By A. N. WHITEHEAD. Cambridge University Press. Pp.
xii, 190.

PROF. WHITEHEAD's two former works on the philosophy of Nature, which have been reviewed in MIND by Prof. Taylor and the present writer, gave a highly original and profoundly important theory which led up to the well-known transformation equations of the Special Theory of Relativity. They did not, however, deal with the General Theory and the modifications involved thereby in the Law of Gravitation. In the present work Prof. Whitehead treats the General Theory from his own standpoint, which differs fundamentally in certain respects from that of Einstein or Weyl. The book falls into three parts. The first is mainly epistemological; the second consists of a number of detailed applications of Prof. Whitehead's formula for the law of gravitation to certain physical phenomena; the third is purely mathematical, and is a sketch of the general theory of Tensors.

Parts II. and III. are too technical for detailed review in MIND, even if I were competent to do this adequately. I will confine myself to saying that in Part II. Prof. Whitehead shows that his law of gravitation leads to all the results which have been deduced from Einstein's law and verified. He further deduces a number of consequences in electricity, magnetism, heat, etc., by which his own law might be experimentally tested; but, unfortunately, the effects thus deduced are probably all below the limits of our present powers of observation. He has also applied his law to the problem of the Moon's motion, and has reached certain modifications in the results of the classical theory; but apparently the observations needed to verify or refute these consequences are at present lacking. Part III. makes certain improvements in the usual notation for tensors, and has the great advantage of treating the whole subject in a perfectly general way without putting geometrical interpretations on the various special tensors which are introduced. So far as I can judge it seems well fitted to conduct anyone with a fair knowledge of mathematics into the heart of the subject.

The only criticism which I have to make on these parts of the book is that they seem to me to consist too much of isolated snippets, and that they could be improved by a good deal more explanation, illustration, and general "connective tissue". I

should not have ventured to make these criticisms had I not found that several of my mathematical colleagues shared my difficulties to some extent. I wholly disagree with Whitehead's admiration for the practice of writing books in the lecture form. After lectures people can ask questions, and their difficulties can often be cleared up in a few words. Readers of books are not in this happy position; and therefore admirable lectures may make very bad books, if published without supplement or modification. I am quite certain that Prof. Whitehead would have written a book which would have been far better understood and would have exercised a far wider influence if he had not simply reproduced his various lectures, but had used them as the basis for a larger, more detailed, and more coherent work. It is the more regrettable that he has not done this, because his main thesis is so important and original that it were a thousand pities if it should be ignored by those whom it vitally concerns, on account of defects in his exposition. Having said so much about Parts II. and III. I will now confine myself to the general view developed in Part I., which forms the basis of the whole and will be of most interest to the majority of readers of *MIND*.

The points of agreement and the points of difference between Whitehead and other Relativists, like Einstein, can be stated quite shortly and simply. He agrees with them that the fundamental relations in Nature are not spatial or temporal but are spatio-temporal, and that Space and Time are two abstractions from Space-Time, just as planes and straight lines are two abstractions from volumes. The fundamental stuff of Nature is therefore events, which have duration as well as extension. Again, he agrees that there is not just one possible way of slicing up Space-Time, leading to one unique Space and one unique Time. There is an infinite plurality of different "directions" in Space-Time, each of which is an equally permissible time-axis for dating all physical events. Corresponding to each of these there is a certain timeless space; and all these timeless spaces are equally permissible for placing all physical events, provided you use the corresponding time-direction for dating them. Thirdly, he agrees that not *all* directions in Space-Time are permissible time-axes; all those which are permissible as time-axes are confined within a certain four-dimensional cone. Next, he agrees that the fact that the fundamental relations in Nature are spatio-temporal necessitates a modification in the traditional law of gravitation. This law takes account only of the *distances* between *bodies*, whereas a genuine law of Nature must be in terms of the *spatio-temporal* separation between *events*. He agrees, moreover, that the laws of Nature must be expressible in tensor form, and holds that Einstein's law, when properly interpreted, is at least a *possible* form of the law. These, I think, are the main points of agreement between Whitehead and the orthodox Relativists. We must now consider the points of difference.

In the first place, Whitehead's method of reaching the trans-

formation equations of the Special Theory of Relativity is different from the classical method. The classical deduction starts from the empirical fact that the measured velocity of light with respect to different sets of material axes is the same, in spite of these axes being in motion with respect to each other, provided that they are resting or moving uniformly in straight lines with respect to a Newtonian frame of reference. The grounds for accepting this as a fact are the negative results of the Michelson-Morley experiment and of certain electro-magnetic experiments. Whitehead's method of treatment has been fully developed in his earlier works and has been described by me in *MIND* in my review of his *Principles of Natural Knowledge*. A summary is given in the present book, but I do not think it could possibly be understood by anyone who was unacquainted with the earlier writings. Whitehead starts from the conception of a plurality of different time-systems, such that durations belonging to any one are parallel and durations belonging to any two intersect each other. He is then able to define the momentary spaces of any time-system and to define the parallelism of planes and lines in any momentary space. Next, by considering motion and rest, he is able to define the timeless space of any time-system, and to show that its geometry is the same as that of the momentary spaces, although its points, straight lines, and planes, are different from those of momentary spaces and of Space-Time. The conception of a time-system also enables him to define normality. Having defined parallelism and normality he is able to set up a system of measurement for Space-Time. He takes it as axiomatic (a) that the opposite sides of parallelograms are congruent. This enables him to deal with the congruence of stretches on different but mutually parallel straight lines. (b) His second axiom is that if a normal be drawn from any point to any straight line, and equal stretches be marked off in opposite directions from the foot of the normal along the straight line, then the lines joining their opposite extremities to the external point are congruent. This enables him to deal with the congruence of stretches on non-parallel lines. The only further assumption that is needed is that the velocity of S_1 in the timeless space of S_2 is equal and opposite to that of S_2 in the timeless space of S_1 . With these assumptions he deduces the standard transformations of the Special Theory, except that where c , the velocity of light, appears in the latter, Whitehead has an undetermined constant k , which expresses the relation between the units in which we measure time and the units in which we measure length. It is simply an empirical fact that this constant k is approximately identical in value with the velocity of light. It will thus be seen that Whitehead's deduction involves very much more fundamental considerations than the standard deduction. He ascribes three special merits to his method: (1) He has defined parallelism. (2) He has defined normality. (3) The notion of time-systems has given a clear meaning to the notion of a Newtonian frame of reference, and has solved the old philosophical difficulties about absolute rotation.

It is greatly to be wished that Whitehead had entered more into detail about this last claim. He has now made it in an incidental paragraph three times over in successive works. If it be true, it is of the utmost importance, and it ought to be discussed in some detail. At present I cannot see that Whitehead has accomplished anything more in this matter than the old doctrine of absolute Space and Time. Two questions can be raised about Newtonian frames. (1) What do we *mean* by them? and (2) How can we tell in practice when we have got hold of one? The old theory of absolute Space and Time gave a clear answer to the first and no answer to the second. We had in practice to take the fixed stars for our spatial axes and suitably adjusted pendulum clocks for our temporal standards. Whitehead's theory seems to me to be in exactly the same position. It gives an alternative answer to the first question, which is no doubt better in accord with the facts on which the Theory of Relativity is based. But, as regards the second, it seems to me to leave us with the fixed stars and pendulum clocks as our only means of determining what is in fact a time-system in Whitehead's sense. Of course, I do not suppose that he would make such claims unless he had good reasons for doing so. But I do know that much more competent mathematicians than I have failed to understand his precise point, and it therefore probably does need further elucidation.

The second and still more fundamental difference between Whitehead and the orthodox Relativists concerns the structure of Space-Time. The orthodox interpretation of the General Theory of Relativity is that Space-Time is non-homaloidal, *i.e.*, that it has not an uniform structure always and everywhere but that its structure varies with its contents. This whole book is a protest against this view. Whitehead is concerned to prove two points: (1) That Space-Time is and must be homaloidal; (2) That nevertheless the traditional law of gravitation can and must be modified, and that the modifications will account for the facts, such as the change in the perihelion of Mercury and the deflexion of light by the sun, which Einstein's theory accounts for. I will say a little about his views on these two points in turn.

(1) Whitehead has two main arguments in favour of the view that Space-Time must be homaloidal. His first argument may be called epistemological, for it practically amounts to saying that if Space-Time were non-homaloidal, induction would be impossible. His second argument has to do with measurement. So far as I understand it it asserts that the approximate agreements between the spatial measurements and between the temporal measurements of different people is only explicable on the assumption of the uniformity of Space-Time.

(a) The epistemological argument occurs in chap. ii., pp. 14-16 and in chap. iv., pp. 62-66. The first treatment is fuller, but perhaps the second is clearer. Whitehead distinguishes between "fact" and "factors". By "fact" he seems to mean something very

much like the presentation-continuum of the psychologists, subject to the modification that it is not supposed to be mental or to be confined to one individual. "Factors" seem to mean limitations within fact, much as *sensa* are differentiations within a sense-continuum; but Whitehead apparently regards universals as factors, as well as the finite events in which these universals inhere. We must not regard factors as primitive, and fact as built out of them as a wall is built of bricks. On the other hand, we must not regard factors as differentiations of fact made by our own subjective activities. It is of the nature of fact to be differentiated into, though never exhausted by, factors. But it is also of the nature of any factor to have such and such relations to other factors of fact. *E.g.*, the factor red essentially involves a reference to some place which is red and to some time throughout which this place is red. Now we can know factors in two ways, *viz.*, "by adjective" and "by relation". When I see a red spot and note its redness I know it by adjective. But, as the spot has to be somewhere and somewhen in the whole which we call "nature," we also know it by its relations to those other factors in nature which place and date it. Many factors are known only by relation, I know that there is an inside to a box, though I may know nothing about the adjectives which qualify this inside. I know the inside by its spatial relations to the outside, which I know by adjective. This distinction between the two kinds of knowledge is obviously a good deal like that between acquaintance and description, though I doubt whether it exactly agrees with the latter antithesis.

Now, so far as I can understand Whitehead's argument for the uniformity of Space-Time, it runs as follows. I cannot know a factor without knowing other factors to which it is related. But I must not need to know *all* its relations to *all* other factors, or I should be unable to know anything till I knew everything. Whitehead therefore holds that we must distinguish between necessary and contingent relations. We must hold that there are certain relations to all other factors, which a given factor must have in order to be the factor which it is. But there are other relations which might have been different though the given factor was what it is. Also we must be able to know what these necessary relations are; for we only know the other factors of fact, to which the given factor refers, as those which have such and such relations to the given factor. Now this is only possible if the relations in question are the same throughout the *whole* of Nature as they are within *limited regions* of Nature in which they can be directly observed. The relations in question are spatio-temporal; and thus Whitehead claims to have proved that Space-Time must be homaloidal, if knowledge of Nature is to be possible.

I must confess that I should be greatly surprised if so concrete a result can be reached from such abstract premises. Even if we accept the whole of the argument up to the last step, I doubt if

we have any right to take that further step. It seems to me that the most that such an argument could prove is that there are *some* uniform relations. No doubt spatio-temporal relations would then be plausible candidates for the position, but that is as far as one could go. Moreover, suppose it be granted that spatio-temporal relations are the ones which must be uniform, the question might still be raised: "*How much* uniformity must they possess?" There is a certain amount of uniformity even in Einstein's non-homoloidal Space-Time. The "separation" is everywhere an homogeneous quadratic function of the differentials of the four parameters which determine a point-event. Would it not be perfectly compatible with the epistemological argument to say that only *this* amount of uniformity was necessary, and that the particular coefficients of these differentials is contingent and variable?

(b) Whitehead's other argument to prove that Space-Time must be homoloidal is contained in chapter iii. This is a most interesting chapter in which Whitehead deals with the general theory of congruence and equality. The earlier part of this chapter is quite general. It points out that you cannot talk of "equality" in the abstract; equality always involves the "matching" of two things, *i.e.*, the possession by both of them of a certain one member of a certain class of qualities. Whitehead calls the class of qualities which is presupposed in any given case of equality "the qualifying class" and the class of things which have one or other of these qualities, "the qualified class". The minimum intelligible statement that can be made about the equality of two terms A and B is that "A has equality to B with respect to the qualifying class γ ". This might be more shortly put in the form "A has γ -equality with B". It is quite evident that A might have γ -equality with B and might not have δ -equality with B. *E.g.*, a pillar-box and a fire-engine have (roughly) colour-equality, but they do not have shape-equality.

He now applies these general considerations to the particular case of the congruence of stretches. He first takes a single unbounded straight line. The qualified class will now be the class of all finite stretches on this line. The qualifying class must be some set of qualities such that every stretch has one of them and no stretch has more than one. Two stretches will be congruent when they both possess one single quality from this set. He then lays down five conditions which the qualities in a qualifying class must obey if the "matching" of two stretches in respect to such qualities is to be what we understand by congruence.

So far Whitehead has simply been laying down a set of perfectly general conditions for the possibility of measurement. He now points out that in theory there might be innumerable different qualifying classes, all of which fulfil all these conditions. Indeed, I understand him to say that it can be proved from Lie's theory of Continuous Groups that this *must* be so. Now two stretches which are congruent with respect to one of these qualifying classes will be

wildly incongruent with respect to others of them. So the problem at once arises: "Why do we all agree approximately as to what is congruent with what? Why are there not perfectly rational people who measure in a perfectly consistent way and make the distance from London to Glasgow shorter than the distance from London to Brighton?" His answer is that there must in fact be some one qualifying class which we all use in our judgments of congruence. This involves the recognition by us all of a certain fundamental spatio-temporal structure in Nature. It must be *spatio-temporal*; for we have to account for our approximate agreement about time-congruence, as well as for our approximate agreement about space-congruence. He further argues that this structure is due to the existence of different time-systems in Nature, such that the successive momentary spaces of any one of them have Euclidean parallelism to each other, whilst the momentary spaces of any two of them intersect each other.

It can hardly be doubted that Whitehead has here got hold of very important facts. It seems to me that he rather confuses the discussion for the lay reader by using these facts in quick succession for four purposes. First, he uses them to prove that the classical theory of measurement as developed by pure mathematicians is inadequate to account for all the facts. So far as a non-expert can judge, he seems to have made out a very good case for this. Secondly, he uses them to prove that the classical Relationist theory that Space consists of relations between *bodies* will not do, and must be replaced by a theory of *spatio-temporal* relations between *events*. This is undoubtedly true, though I do not think that its precise connexion with the present argument is made any too clear. Thirdly, he uses them to support the Special Theory of Relativity, as supplying just that stratification of Nature into different time-systems which provides the spatio-temporal structure needed to account for the agreement between our judgments of congruence. Lastly, I understand that he also uses them to show that the structure of Space-Time must be homaloidal, and cannot be such as Einstein has suggested in the General Theory of Relativity. Now it may be that there is a much closer logical connexion between all these apparently different conclusions than I can detect; if so, it is to be wished that Whitehead had explained it more fully. It is certainly not clear to me that the last conclusion follows at all. I should have thought that the *de facto* agreement of our judgments of congruence, so far as it goes, required nothing more than an approximately uniform spatio-temporal structure within those regions of extension and duration which we have measured. So far as I can understand, this condition would be fulfilled on Einstein's theory, since the departure from Euclidean structure is excessively small even in the neighbourhood of a huge gravitating mass like the sun.

I am therefore not persuaded that Whitehead has proved his main contention that Space-Time *must* be homaloidal. But the

whole subject is so difficult and moves in such very unfamiliar regions that I should hesitate to express a positive opinion. Reviewers too often rush in where philosophers and mathematicians fear to tread. What seems to me certain is that Whitehead has produced important arguments which should make us pause before deserting the traditional views so far as to make Space-Time non-homoloidal. In addition to this he seems to me to have shown quite conclusively that there is nothing to *force* us to a non-homoloidal theory. He has succeeded in giving a modified law of gravitation which will do all that is needed of it, and which requires only the homoloidal Space-Time of the Special Theory of Relativity. I will end the review with a short sketch of Whitehead's suggested law.

(2) It would be quite impossible to enter in detail into Whitehead's suggested law. The most I can do is to state in outline and in my own words how it seems to me to be connected with the traditional law. Although I think I understand the general drift of Whitehead's argument from pages 71 to 82, I find some of the details extremely hard to follow. In fact the vitally important equations (9) and (13) seem to be shot out of a pistol, and Whitehead cannot expect to be understood by any reasonable number of people if he will not supply a little more help to his readers at the turning points of the argument. It is therefore possible that the account which I am going to offer is quite wide of the mark; the intending student of the book must therefore take my remarks for what (if anything) they are worth.

The traditional law calculates the gravitational potential at any point P in the following way. It takes a typical external point X, supposed to be occupied by a particle of mass m_x , and it says that the gravitational potential at P, due to this, is $\frac{\gamma m_x}{PX}$, where γ is the gravitational constant and PX is the distance from X to P. To find the total gravitational potential at P it sums up for all external points such as X, getting $\sum_x \frac{\gamma m_x}{PX}$ as a result. To find the effective gravitational potential at P we must multiply this by m_P , the mass of the particle at P.

Now it is quite certain that this is not a permissible law of Nature on the view of Space-Time which Whitehead and the Special Theory of Relativity agree in accepting. A true law would be co-variant as between all the different equally permissible time-systems; but the traditional law, which is wholly in terms of spatial separation and makes no mention of temporal separation, cannot be so. On the other hand, we know that the traditional law is *numerically* very nearly true. Thus the problem is to find a law which shall lead to the traditional law as a first approximation, but shall be of such a form as to be covariant for transformations from any one time-system and its associated timeless space to any other. Such a law will certainly have to be in terms of

events and their spatio-temporal separations, and not, like the traditional law, in terms of *bodies* and their purely *spatial* separations. To put it crudely, you must not consider what is going on at other places at the *same* moment in order to find the gravitational potential at a given place now. You must consider what *was* going on at any place at such a moment in the past that its influence would reach the given place at the present time. The further a place is from the given place the more remote is the event in its history which is relevant to what is going on in the given place now. This conception is quite familiar in electro-magnetics under the name of "retarded potentials," and it seems to me that the essence of Whitehead's modification is the introduction of retarded potentials into gravitational theory.

So far as I can understand, this is not quite the whole of Whitehead's modification of the traditional law. The other important point is this. The notion of a mass-point-event, *i.e.*, the occupation of a geometrical point at an instant by a mass, is obviously a product of extreme abstraction. Now I understand the other essential feature in Whitehead's view to be that this degree of abstraction is too extreme for dealing with the laws of physics. Instead of taking a point-event and considering the influence of all other correlated point-events and their contents on the nature of *its* contents, he finds it necessary to deal with slightly less abstract elements. He still keeps the spatial dimensions null (though he admits that this is probably an over-simplification); but he takes short historical stretches instead of momentary event-particles. Thus his problem is to find the influence which is exerted on the contents of an infinitesimal slice of the history of a point by the contents of infinitesimal slices of the history of all other points starting from correlated times. Thus his law of gravitation appears as an equation involving infinitesimal stretches along historical routes. This is perhaps the most original and philosophically interesting feature of his theory.

It would be impossible to over-estimate the importance and interest of this book. It shows Whitehead's powers of original thought and detailed mathematical application at their highest. But I am very much afraid that it will not have the influence which it ought to have. From the nature of its subject-matter it cannot be easy, and I cannot but think that it has been made quite needlessly difficult by excessive condensation. No doubt a professional mathematician would easily fill in certain gaps in the argument which a mere amateur like myself finds disconcerting. But I am at least fairly familiar with the subjects which it treats, and I am afraid that readers who do not start with that initial advantage will sometimes be tempted to give up in despair.

C. BROAD.

The Idea of Immortality. The Gifford Lectures delivered in the University of Edinburgh in the year 1922. By A. SETH PRINGLE-PATTISON, LL.D., D.C.L., Fellow of the British Academy, Emeritus Professor of Logic and Metaphysics in the University of Edinburgh. Oxford: At the Clarendon Press, 1922. Pp. 210.

"SOME ONE," says Dr. Pringle-Pattison (p. 91), "has wittily remarked that the customary conception of man treats the human being as 'a mechanical union of a corpse and a ghost,'" and he agrees with the implication in the quotation that such a description is incorrect.

A corpse and a ghost cannot here mean, as they mean in ordinary language, a body which is not connected with a self, and a self which is not connected with a body. For the two are said to be in a union with one another. The meaning must be that the body is capable of existing when not in union with the self, and that the self is capable of existing when not in union with the body. The rather vague phrase "mechanical union" presumably refers to the same fact—that the body could, under other circumstances, exist without the self, and the self without the body, or at any rate that one of the two could exist without the other.

It seems to me that this is clearly the right account of the relation between the self and the body. But there are, no doubt, arguments—though they seem to me insufficient—for adopting other views. One thing, however, seems to me to be absolutely beyond dispute, and that is, that unless the self is a "ghost," and its union with the body is "mechanical," it is quite impossible that the self should be immortal. It is quite certain that the body, in every case, ceases to be a body—whether, as some people would hold, at the moment of death, or, as I should prefer to say, in the course of decomposition. The self cannot, therefore, be immortal unless it can exist independently of the body, when the latter has perished, and unless, therefore, it is what was called a ghost. And if the self can part company with the body, and yet remain a self, the union must be what is meant by mechanical.

This view, however, Dr. Pringle-Pattison rejects, mainly, as it would seem, on the ground that it involves the substantiality of the soul. He defines substance (p. 70) as "'id quod per se stat,' a concretely existent thing as distinguished from qualities or attributes which are conceived as existing *in alio*, i.e., as the attributes or activities of some real being". With this definition, I believe that most thinkers who accept the conception of substance would agree.

But he regards it as dangerous to speak of the soul as substance, since it will betray us into "a thinly disguised materialism". For the original and natural application of the term was to material bodies, and so, if we think of a soul as substance, we shall think of it on the analogy of a material thing. "The ordinary idea of such a thing implies an ultimate core of reality which remains unchanged

throughout the changes of its more superficial states or qualities; and the soul-thing or soul-substance is similarly conceived as a perfectly simple and absolutely self-identical somewhat, which persists unchanged throughout the flux of our mental experience . . . a changeless unit" (p. 73).

Now the idea of substance may have been originally applied to matter, and the idea of material substance may be what Dr. Pringle-Pattison says it is—I am not competent to discuss either point. But he seems to me utterly wrong, as a matter of history, when he says that the soul as a substance is conceived as unchangeable in time. Of course those philosophers who thought that nothing was really in time, thought that selves were not really in time, and therefore were unchangeable. But those philosophers who thought that there was time and change have always accepted the fact that substances changed, while preserving their identity through change.

The two greatest modern philosophers who accepted the reality of time and held the self to be a substance, were Leibniz and Berkeley, and it is beyond doubt that they both held that every self, except God, changed in time. It is true that they both declared the self to be simple and indivisible. But if we look at their treatment of the subject, it is clear that they meant that it was simple and indivisible in the dimension of simultaneity, and that they did not assert it to be simple and indivisible in the dimension of succession. I do not think, indeed, that when they asserted it to be simple and indivisible in the dimension of simultaneity, they meant that it had no parts in that dimension, but only that, unlike material compounds, it had no parts which could exist, previously or subsequently, without being parts of the self. If they had maintained more than this they would have fallen into an inconsistency so great as to be extremely improbable, since they both held cognitions to be parts of the selves. And they did not want to maintain more than this, since their only interest in the simplicity of the self was to argue from it, in the manner which was refuted by Kant, to the immortality of the self. And for this purpose it would have been sufficient to show that the self could not break up into parts which could continue to exist after the self had perished.

But whether they held that selves were or were not simple in the dimension of simultaneity, they both believed that non-divine selves changed in the dimension of time. And I think that most, if not all, other writers who have believed that time was real and souls were substances, have followed them. The view that a substance must be "an ultimate core of reality which remains unchanged throughout the changes" seems to have no place except as something which Locke believed that other people believed. And, if Locke understood anything clearly, it was certainly not the philosophy of other people.

Dr. Pringle-Pattison, having rejected the possibility that the self should be a substance, has to give another theory of its nature. He adopts Aristotle's remarkable view that "the soul is the entelechy

or fulfilment, the complete account of the living body" (p. 70). "The human embryo in question is born with the potentiality of reason, and . . . this particular body is the means appointed for its realisation" (*ibid.*). "The soul, it has sometimes been said, weaves itself a body. From the point of view I am at present emphasising, we might rather say the body grows itself a soul" (*ibid.*). "The organism in common with the environment is the medium in which the soul comes into being" (p. 71). "We might almost speak of the body growing a soul" (p. 102).

These passages, taken by themselves, would suggest that the self is an activity of the body, and that the brain produces thought as the liver produces bile—which would be a materialism without even a thin disguise. But Dr. Pringle-Pattison is not a materialist. (Indeed, he tells us (p. 80) that materialism is "hopelessly out of date," which he seems to regard as one of the severest condemnations which can be passed on any theory of the universe.) His reason for rejecting it is to be found, I think, on page 104 where he tells us that the conscious self "shaped by all its experiences, and resuming them in an intense and characteristic unity," is felt by the ordinary man "to possess a reality to which the facts of the animal life on which it is reared appear merely accessory; he is ready to agree with Socrates and Plato that *this* is his 'true self,' not the body which he carries about with him". In this Dr. Pringle-Pattison agrees with his ordinary man. The result, so far as I can see, is that the self is produced by the body, but that, when produced, it is neither a part nor an activity of the body, but something other than the body. Since the theory is Dr. Pringle-Pattison's, I must not presume to call it a substance, though that is what it seems to me to be, but perhaps entity may be considered a sufficiently neutral word.

In this view there is nothing contradictory. It may be an ultimate causal law that, when a human body is in a certain state and acting in a certain manner, a self will come into existence which has certain characteristics. But the union of two entities by an ultimate causal law can scarcely escape the charge of being a "mechanical union," if any sort of union is mechanical. And it was implied in the quotation with which I began my article that the union between body and mind was not to be mechanical.

And the situation becomes still more difficult when we remember that Dr. Pringle-Pattison, after all, believes in immortality. "The body, ceasing to be a living body, may relapse into its elements when it has 'fulfilled' itself, while the true individual, in which that fulfilment consisted, pursues his destiny under new conditions" (p. 105). One of the new conditions is that he will be no longer united to his body. What is he then, except that ghost which the author will not allow us to call him?

The relation which the author considers to exist between body and mind is thus rather obscure. It is not made simpler by a remarkable attempt which he makes to discriminate very decisively

between organisms and inorganic matter. "The parts of an organism are so much members one of another and of the whole which they constitute—they are so interpenetrative in their action—that it is hardly a paradox to say that organism *qua* organism is not in space at all" (p. 93). That the members of organisms should be members of one another is simply impossible. That they are members of the whole is very true—so are the parts of a pebble. That they form a more vital unity than the parts of a pebble may be true. But how does this make them less spatial? Let us take these four statements "my body occupies more than a cubic inch," "the waters of the Atlantic occupy more than a cubic mile," "my brain is within my skull," "Etna is within Sicily". In what sense can it be said that the first and third are less true than the second and fourth? And, if they are equally true, in what sense can it be said that organisms are not in space?

We have seen that, if selves are to be immortal, it will be necessary for them to be the ghosts, in mechanical union with their bodies, which Dr. Pringle-Pattison has said that they must not be. But, waiving this difficulty, what are his positive reasons for supposing that selves are in any case immortal? The argument is to be found at the beginning of Lecture 10 (p. 190). The author first summarises very briefly the grounds for supposing that there is a God, and that such a God finds the fruition of his nature in love, "not in any shallow sentimental sense, but the self-giving Love which expands itself for others, and lives in both their joys and sorrows"—in other words, I should venture to comment, not love at all, but benevolence. "And if so, the value of the finite world to the Spirit of the universe must lie, above all else . . . in the spirits to whom he has given the capacity to make themselves in his own image. The spirits themselves must be the values to God, not simply the degrees of intelligence and virtue, abstractly considered, which they respectively realise. They are not made then—we seem justified in concluding—to be broken up and cast aside and to be replaced by relays of others in a continual succession."

It would be irrelevant to our present purpose to consider whether Dr. Pringle-Pattison's argument for the existence of a beneficent God is valid. But, even assuming its validity, the argument from the existence of such a God to human immortality is fallacious. Like all arguments from the existence of a beneficent God to any particular form of good, it is refuted by the existence of evil. That there is some evil is not to be denied. No such God would desire any evil. Therefore either there is no such God, or his desires are not always fulfilled. And if they are not always fulfilled, how can we be certain that they will be fulfilled in any particular case? There is no God such as to preserve me always from a headache. How can I be sure that there is a God such as to preserve me always from annihilation? It is true that I might—personally, I am confident that I should—lose much more by

annihilation than by a headache, and that, therefore, a beneficent God would desire that the former should be avoided more than the latter. But that does not exclude the possibility that the former should be impossible to avoid.

It is to be noticed that Dr. Pringle-Pattison does not think that it can be demonstrated that all selves are immortal. "People talk as if the being of a soul were something which almost defied annihilation, which at any rate could be brought to an end only by a special fiat of the Deity. But surely it is quite the other way. It is but a relaxing of central control, and a process of dissociation begins at once" (p. 197). Immortality may be gained, we are told, by moral qualities without any intellectual excellences, but not by intellectual excellences apart from moral qualities (p. 198). The reason for this distinction does not seem evident.

I have spent so much of my space on Dr. Pringle-Pattison's main argument that I must omit any notice of the historical part of his work, and even of his most interesting discussion as to the relation of eternity to the present and the future. As to the latter, I will only quote his conclusion. "The attempt to discard the durational form becomes in the end an affectation, which betrays us into a negative position actually falser (I have contended) than the popular crudities against which it is a protest" (p. 205). This seems to me to be a warning which is absolutely correct, and which is badly wanted.

I have to thank Dr. Pringle-Pattison for some courteous criticisms on my own work. Most of them turn on ultimate judgments of value, and do not admit of argument. I can only repeat that I am still clear that, under certain conditions, immortality without memory might be both real and valuable. There is, however, one point on which I do not think that he has judged me correctly. He says (p. 123) that my metaphysical argument rests entirely on my definition of the self. And he says, just above, that it rests on my statement that the self is "a substance existing in its own right". It would seem, then, that he thinks that I defined a self as a substance existing in its own right. I do not think that I ever did *define* a self in such a way. I certainly have failed to find the definition in looking through my books. And in *Studies in the Hegelian Cosmology* I endeavoured to *prove* that a self was a substance existing in its own right, and that this involved, for reasons which I give, that each self exists through all time. I do not now consider the line of argument which I then adopted as valid, though I think that I have found better reasons for the same conclusion, which I hope some day to publish.

J. ELLIS McTAGGART.

A Theory of Monads. By H. WILDON CARR, D.LITT., London: Macmillan & Co., 1922. Pp. viii, 351.

THROUGHOUT this admirable statement and defence of the metaphysics of monadology, the influence of two principles on the thought of the author is continually evident. These are Bergson's principle of creative evolution, and Einstein's principle of relativity. Leibnizian monadology, always a formidable theory to refute so far as its essentials were concerned, derives new strength from its modification in the light of the concepts of creative evolution and relativity.

Dr. Wildon Carr has made out a convincing and, in some important respects, original case for a modified spiritual pluralism. To the present writer the task of reviewing the book under consideration is a pleasant one, for he is happy to find himself in fundamental agreement with Dr. Carr. In these circumstances it will perhaps be most appropriate to follow a brief outline of the contents of the book by a rather more detailed discussion of certain points which appear to the reviewer to call for criticism or the reverse.

In the first place, then, we may say briefly that for Dr. Carr the universe is essentially spiritual in that it consists ultimately of monadic beings constituted by living, individual experiences. These individuals are not "externalities". On the contrary, they are "internalities," focal centres of activity each of which mirrors the universe from its own "point of view".

Again, for Dr. Carr the universe is pluralistic in so far as the existence of the monads is "substantial" and not "adjectival" in type. The monads are real, substantial existences in themselves, not mere attributes or partial aspects of a single, ultimate, absolute being. Yet Dr. Carr modifies this pluralism by the introduction of the concept of God as an immanent, universal activity. He says: "We must conceive [God] not as transcendent but as immanent, not as a super-individual creating or annihilating finite individuals as he chooses, but as an infinite individual, the complement of finite individuality" (p. 112). And again: "When we conceive universal activity in the same mode in which we conceive our individual activity, in the living intuition in the moment of experience, then we have the idea of God" (p. 116).

The monads are subjects of experience. Each is "a subject owning its predicates, not a substance displayed with its attributes to the contemplation of another" (p. 22). But the monads are "windowless," in the sense that there exists between them no "interaction" properly so-called (pp. 36 and 112). Yet they have "intercourse" with one another (p. 245). The point raised in this connexion will call for our consideration later.

The "perspective" of each monad includes the whole universe, for all other monads are within this perspective (p. 53). The perspective itself is absolute, whatever the level of the being (whether

man or mite, to take Dr. Carr's illustrations) to which it belongs. There is no absolute and independent standard of magnitude whereby a ratio may be fixed between different perspectives (pp. 49 f.).

The mind and the world are immediately related in what Dr. Carr calls "the moment of experience". This is "the moment during which experience is sense-experience" (p. 126). It is "the moment of conscious activity" (p. 143), and "activity is the moment of change" which is "not succession but self-making," the apprehension of which, in a moment of consciousness, implies "the holding together, in that moment, past and present, and past as present. . . . This is the concept of life . . . the highest concept we can reach, for in it we grasp intellectually the reality we know intuitively. In the moment of experience we live as well as know, and we know in living the very reality we objectify in knowing" (p. 148).

Memory, not sensation, "is the fundamental fact in experience which conditions everything. Perception is . . . seen to depend upon memory and not *vice versa*, and sensation to depend on perception. . . . When . . . we analyse the concept of perception we see that what is essential in it is recognition, and recognition supposes memory" (pp. 158 f.). Moreover, "the image, not the sensation, is the pivotal fact on which the whole structure of intellectual knowledge rests" (p. 234), and "the image is the product of an æsthetic activity and not of a passive sensibility" (p. 235). Accordingly, "sensations, however fundamental, essential, and important, play a comparatively subordinate role in the mental life. No construction of them or development of them can constitute the concrete reality of life. The first expression of complete mind is the image, not the sensation, and the first self-sufficient form of activity is the imagination. When as yet there is no image, there is nothing. Abstract sensations cannot be welded together to form an image" (p. 240).

Dr. Carr's treatment of the mind-body problem is interesting. He says: "When . . . we turn our attention inwards, then we are led to recognise that we are not at points where two realities converge but at points where two directions diverge; that the mind-body is not two things associated but one thing dissociated. Then the ultimate concept of reality is not a reality which conditions life and knowledge but a reality which essentially is life and knowledge. What had previously appeared as the condition of life now becomes an opposition which conditions the activity of life." And again, "The union between the two systems [*i.e.*, mind and body] consists in a relation of mutual independence, but it is the systems which are interdependent. It is not a point-to-point union, nor a point-to-point correspondence of the constituent parts of one system with those of another" (p. 209). "The interaction of mind and body is not of a causal but of a solidary nature" (p. 218).

In considering the problem of knowledge, Dr. Carr affirms that

"between knowledge and truth there exists no difference . . . truth is not the object of knowledge but the validity of knowledge. . . . It is clear, then, that if the object of knowledge be something confronting the knowing mind, an outside which in knowing is brought inside, the act of knowing must be essentially an act of faith and its validity miraculous" (p. 268). "Knowledge requires and supposes both sense perception and thought, both percepts and ideas. The senses provide the matter, the ideas the form of knowledge;" but ideas "are not derived from sense perceptions, for these do not contain them. They must belong to the constitution of the mind." Yet the possession of ideas or rational forms by the mind is not sufficient, for "there is a constituent of knowledge which ideas cannot give. Thinking will not produce sensation. Knowledge then is a synthesis. Its condition is that two separate, completely heterogeneous, factors exist in unity. Neither of these factors can of itself bring about the synthesis. The synthesis is original and *a priori*. It is not brought about by experience but is the condition of experience. This was Kant's great philosophical discovery" (p. 279). "The factors . . . which form the synthesis in which knowledge consists exist in their unity in the monad" (p. 282), and "the concept of an *a priori* synthesis is in what is essential to it the concept of the monad" (p. 280).

Dr. Carr distinguishes two meanings of the term "concept". In the first place "concepts are . . . the opposite of percepts. They are a kind of mental reconstruction of sense-imagery enabling the mind to complete what is incomplete in its immediate apprehension. A mind able to apprehend all reality in a single intuition would have no need of concepts". Secondly, "concepts are universals as distinct from particulars," and "the whatness or content of the things we experience as particulars is their universality". Thus "every attempt of the mind to discover the reality implied in our experience supposes the use of concepts, and these concepts . . . are totally different in kind from percepts" (pp. 285 f.).

Dr. Carr draws attention to the reality of the opposition between world and mind. "Objects are alien, independent of and indifferent to the mind which knows them" (p. 292). "The movement of thought is the passing over into this opposition and the discovery that in this difference there is identity." The concrete reality of life and mind consists "in the synthesis of a pure act which holds together at the same time that it holds apart the distinct factors of reality. This . . . is the philosophical doctrine of the concrete universal" (p. 298). "It is only in the concept of the monad that the concrete universal is both realised and individualised" (p. 300).

"Reality is not inert stuff, it is a becoming, the continuous upspringing of what is new, what is unforeseen and unforeseeable. This is the concept of life as creative evolution" (p. 302). To life thus considered "the concepts of physics and chemistry" are "completely irrelevant" (p. 303). In this connection Dr. Carr points

out that "spiritual substance" is antithetical to "material substance," for the latter is spatially and temporally conditioned, while, so far as the former is concerned, although the activity and the evolution of life are displayed respectively in space and in time, the concept of life is not dependent on space and time (p. 307). With regard to the intellectual function of spirit, "intellect and matter are correlative," both generated by creative evolution. "Intellect imposes on life the static form of matter, and life assumes to intellect the aspect of fixity" (p. 310). The concept of life elucidated in these and similar passages has the advantage over the concept of naturalism that "in the first place we do not postulate reality, we indicate it"; and "in the second place it [the concept of life] gives us a principle which is really interpretative. The science of naturalism has no interpretative principle. It is reduced to descriptions and to hypotheses based on observed sequences" (p. 312).

Dr. Carr makes the important point that "even in its most extended application the animistic concept is not irrational. Were we not subjects of experience, conscious of our active psychical powers, we should have no knowledge. What surer principle then can we appeal to than that inner experience itself?" Accordingly, "the really extraordinary step to explain is how we . . . reach the concept of inert matter" (p. 327).

Speaking of the experimental method, the author asserts that "experience is not experiment, and the empirical principle in philosophy is not identical with the experimental method in science. Neither learning by experience nor the ability to profit by experience implies or depends in any way on experimenting" (p. 331). Further, "the experimental method is both theoretically meaningless and practically worthless unless what a thing does reveals what a thing is, and not merely what happens to it; and what a thing does can only reveal what it is if the action flow from its nature. This is the concept of the monad, and the monad is the only concept which completely realises the experimental method". "It is the essence of the experimental method that one instance is decisive" (p. 332).

The book closes with a chapter on the principle of relativity. This principle implies the existence of observers or subjects of experience. "Every law of nature . . . is measurable by co-ordinates chosen for a system or frame of reference to which the observer is attached and which consequently for him is a system at rest". But "there is no system of reference which is at rest absolutely in relation to systems of reference which are moving absolutely". Further, "a system of reference is not a thing-in-itself; it is a system of reference only for the observer who co-ordinates the universe from it". The continuity and universality of the laws of nature depend not on the systems of reference but "on the common source and uniform aims of the activity of self-centred subjects of experience. . . . Physical science implies an active subject co-ordinating an external world. . . . The adoption of the principle of

relativity means, therefore, that the subjective factor, inseparable from knowledge in the very concept of it, must enter positively into physical science" (pp. 339 f.)

Finally, "the new scientific revolution has made it possible to reconcile the concept of freedom of mind with the necessity of nature. For the principle of relativity is in effect the insistence that reality shall not be taken as an abstract mind or an abstract nature but as the concrete integration in which they are correlative terms" (p. 346). "The new science cannot conceive reality except as activity. Original activity is dependent on the concept of freedom. This freedom itself creates necessity in every mode by which activity expresses itself. Freedom characterises the act, necessity the fact. It is the act which produces the fact and not *vice versa*". Science is turning from the abstract concept of the material atom to the concrete concept of the monad (p. 347).

The foregoing is a much condensed account of Dr. Carr's main theses. We may now proceed to consider certain points which seem to call for special mention.

The first part of the book is metaphysical, and deals with the nature of the monad. Three assertions are here made with which the present writer is in convinced agreement. Firstly, it is stated that minds are neither in space nor in time (in the physical sense), for spatial and temporal categories are not applicable to them (p. 18). Secondly, it is claimed that in experience subject and object are "united in an indissoluble relation. . . . Suppress either term or the relation which binds them, there is no remainder, all is dissolved" (p. 33). Thirdly, it is pointed out that we can view the universe as consisting of monads and nothing else, but we cannot conceive it as consisting of atoms and nothing else (p. 23). The present writer has given his reason elsewhere for holding these beliefs,¹ and it is unnecessary to enter into them here.

On the other hand, there are matters in this part of the book which invite criticism. To take a comparatively small point first, Dr. Carr does not seem to make sufficiently clear the distinction between the monads as they are in themselves, and the monads as they enter into one another's perspectives (*cf.* especially, p. 53). It would perhaps be preferable to make a definite distinction between the monad-in-itself and its *appearance* (to use the most appropriate term). It is the latter which would form part of the perspectives of other monads.

Difficulties of a more important kind are raised by Dr. Carr's treatment of the interrelations of the monads. He denies the existence of interaction, and substitutes what he calls "intercourse". But he uses the term "interaction" in an arbitrarily restricted sense, namely on the analogy of contact action in the physical world (p. 245). His objection to it is that it implies spatial existence (pp. 25 and 31), and substance as inert extension (p. 113).

¹ *Cf. Spiritual Pluralism and Recent Philosophy*, pp. 40 ff., 162 ff., 84 ff., 13 ff.

But monadic interaction does not involve such implications necessarily any more than material interaction necessarily implies a real ether. Moreover two apparently contradictory statements are made in this connexion, namely (1) "... every change in the state of such a subject is wholly determined by the subject and self-inclusive" (p. 36); and (2) "Intercourse therefore must mean that one mind can *call forth* the activity of another" (p. 345, italics mine). We may grant that in their interrelations the monads do not exchange parts of their substance (p. 36), but this is not sufficient for denying the applicability of the term "interaction" to this interrelation. Surely if a change in one monad be the occasion of a responsive change in another, it is fair to call this process an interaction—compare the physical analogy of wireless telegraphy (used by Dr. Carr himself on p. 245 as an illustration of monadic intercourse), which would certainly be termed "interaction" in the material world. Doubtless the necessities of thought would compel us to search for a universal ground of interaction if we wanted an ultimate *explanation*, but Dr. Carr has got something of the sort in his immanent God.

This brings us to another point, namely, the conception of God. While agreeing with Dr. Carr as to the inconceivability of the creation of monads, it seems to the reviewer that the most cogent argument for this position has been omitted or, at least, not explicitly stated. For the ordinary concept of creation is inseparable from the ordinary concept of time, and the monads are not in time.

It is difficult to follow Dr. Carr's denial of the transcendence of God, for his conception of the deity would seem to imply transcendence as well as immanence (the two are by no means contradictory). God, as a universal activity (p. 116), is immanent, but if he be "an infinite individual, the complement of finite individuality" (p. 112), surely he is also transcendent in a very real sense.

The second part of the book is psychological, and treats of the activity of the monad. The moment of conscious activity is the "moment of experience" (p. 143), which is synonymous with what is often called the "specious present" (p. 137). Dr. Carr emphasises the fact that within the moment of experience there is succession or distinction of before and after, but no distinction of past and present (p. 133). The writer would agree, with the proviso that within the moment of experience *as experienced* there is not even succession—it is an indivisible unity and not a succession of parts.¹ It is only when we try to *think* the moment of experience in subsequent reflexion that we find ourselves compelled by the limitations of thought (as opposed to intuition) to a discursive use of the notion of succession.

Dr. Carr criticises the concept of sense-data as objects in their own right independent of the knowing mind (pp. 144 ff. and later,

¹ Cf. *Spiritual Pluralism*, pp. 173 ff.

in another connexion, p. 317). With the main grounds of his criticism the writer is in general agreement.¹

It is not easy to accept Dr. Carr's assertion that "every present state of consciousness is separated by a distinct and definite outline from every remembered or anticipated state" (p. 125). Indeed, this appears directly contrary to the immediate deliverances of experience. Moreover, if we consider monadic being (which consists in consciousness) as a series of definitely separate (if not separable) states, how are we to avoid introducing the notion of succession into the concept of the monad, and thus making the latter time-bound in the sense which Dr. Carr elsewhere rules out? And again, how are we to reconcile the separateness of "states of consciousness" with the later assertions that "the beginning and end of an action are not divisible into separate events" (p. 153) and "mind does not consist of states" (p. 248)? A reconsideration, in the light of the principle of the unity of experience and with special reference to the nature of time, of the position adopted in this connexion seems called for, especially as the point is in some respects vital to Dr. Carr's main thesis.

Dr. Carr's treatment of sensation, memory, and imagination is not so clear as the remainder of his work. He regards sensation as definitely subordinate to both memory and imagination (pp. 158 f., 234). Recognition is essential to perception, and recognition implies memory, which is therefore a fundamental condition of conscious experience. All this may be granted (though it implies the use of the term "memory" in a definitely special sense), but one cannot help feeling that sensation is equally essential to perception. It may be true that "sensation is bare abstraction incapable of being self-subsistent experience," but it is also true that mere memory is a bare abstraction. Similarly, it may be true that mental activity works from within outwards (p. 248), but this applies equally to sensation and imagination. There seems no ground for denying in sensation the subjective activity which is admitted in imagination, though in sensation the form of activity may be in part determined by entities other than the subject concerned in a way in which imagination is not determined.² The fact seems to be that Dr. Carr makes too sharp distinctions between sensation, memory and imagination. Each by itself is an abstraction, none is self-subsistent, but all are fundamental and interdependent. It must be admitted, however, that this opinion of Dr. Carr's view is expressed with some hesitation for, as stated above, the meaning of his theory on these points is not altogether clear. Possibly the clue to the matter may be that he is here concerned to maintain a view of sensation compatible with his position with regard to monadic intercourse and interaction, for he asserts that "sensation is in its nature and origin purely subjective and internal, and such it must always remain" (p. 249). This is

¹ Cf. *Spiritual Pluralism*, pp. 95 ff., 195 ff.

² *Ibid.*, pp. 220 ff.

apparently a way of expressing the "windowlessness" of the monad, but it is not convincing.

Dr. Carr's account of the mind-body relation appears to suffer from some ambiguity in his conception of the body. He does not take sufficient note of the fact that the relation of mind to body is a dual one. While a mind is related to its body in a certain way in which it is not related to any other material body, it is also related to its body by a relation similar to that which it has to all other material bodies. Hence, although in incarnate existence mental and bodily activity may be inseparable, it by no means follows that mind and body are existentially inseparable as Dr. Carr asserts (p. 207). The body is part of the mind's perspective. It is thus the appearance to the mind of monads other than the mind. But the mind acts with and through the body in a manner which finds no parallel in its relations with the other elements in its perspective. Accordingly the mind must exist in some special relation to the monads of which the body, as part of its perspective, is the appearance. To the present writer the conception of dominant and subordinate monads affords a more convincing account of the mind-body relation than that given by Dr. Carr.¹ The latter urges in support of his contention that the idea of pure, disembodied spirit is inconceivable (pp. 207, 221). Whether it is possible for a spirit to exist without a body of some kind is arguable, but we cannot agree that the idea is inconceivable. Surely one can conceive a thinking, imagining (even, perhaps, a sensing) mind without necessarily conceiving at the same time a body to which the mind in question is indissolubly related.

The third part of the book is logical, and is concerned with the knowledge of the monad. Dr. Carr identifies truth and knowledge (p. 268). The only comment that need be made here is that the distinction between knowing as process and knowledge as product (if Dr. Carr will allow the word) is not always kept sufficiently clear.

Chapters XI. and XII. contain interesting elucidations of the *a priori* synthesis and the concrete universal, leading up to a demonstration that these concepts can only find a satisfactory interpretation in the concept of the monad. One passage calls for further explanation from the author. He emphasises the opposition between mind and world, asserting that "Objects are alien, independent of and indifferent to the mind which knows them" (p. 292). But how is this to be reconciled with his previous statement that "subject and object are distinct but united in an indissoluble relation" (p. 33)?

In discussing the experimental method Dr. Carr uses the term "experiment" in a peculiar and, perhaps, hardly admissible sense. "It is the essence of the experimental method" he says, "that one instance is decisive" (p. 332). But one instance would only be

¹ Cf. *Spiritual Pluralism*, pp. 201 ff.

decisive if we could be sure that all disturbing factors had been ruled out, and we can never be sure. All that can be done is to secure a high degree of probability by repetition of experiment. Repetition is in fact the essence of the experimental method. How many scientists would agree with Dr. Carr's dictum that "In a scientific experiment repetition is entirely unnecessary for the establishment of fact or truth" (p. 232)? In view of the difficulties thus raised we need not stop to criticise the extremely doubtful statement that "Experience is not experiment. . . . Neither learning by experience nor the ability to profit by experience implies or depends in any way on experimenting" (p. 331).

The last chapter contains a discussion of the principle of relativity. We may agree with Dr. Carr that the latter implies monadism, but only if its postulates and primitive ideas (*e.g.*, that of a "system of reference") be analysed. If, on the other hand, these be admitted without question, it is probable that the theory of relativity can be stated without reference (explicit or implicit) to subjects of experience.

To sum up: Dr. Carr has given us what is in the main a lucid and convincing theory of reality in the form of a modified spiritual pluralism or monadology. The chief weaknesses of his work are his treatment of the interrelation of the monads, and of the monadic activity as manifested in the threefold but indissoluble unity of sensation, memory, and imagination. To the present writer, at any rate, it seems that these weaknesses could be eliminated without in the least damaging the main fabric of the theory, and with their elimination other minor weaknesses concerned with the concept of God, the moment of experience, and the mind-body relation would also disappear.

C. A. RICHARDSON.

VI.—NEW BOOKS.

Logik. By ALOIS HÖFLER. Second much enlarged Edition. Vienna: Holder, Pichler, Tempsky & Co., 1922. Pp. xii, 936.

As this book has been enlarged in the second edition to nearly four times its original size, it may be treated as a new work. True to its title it is simply a "Logic" and not an "Epistemological Logic," the discussion of the ultimate problems of epistemology being carefully reserved for an intended second volume (*Erkenntnistheorie*). But, while this limitation is rigorously observed, the *Logik* contains, as is inevitable, a large quantity of specifically metaphysical matter, which is treated with considerable originality. The work should be of great value both to students of logic in the narrower sense and to philosophers in general. It is dedicated to Meinong, and the author attributes the greatest importance to the influence of the latter on his own thought. The new mathematical logic is not dealt with in the body of the work, but a few short articles are inserted by Prof. Ernest Mally as "*Überleitungen von der Logik zur Logistik*" in order to provide an introduction to the study of that subject.

The *Logik* opens with a "psychological introduction," which has as its object the clarification of certain concepts and the provisional fixing of the boundaries of logic. Logic is defined as "the teaching of correct thinking," and together with psychology (!) and ethics is made a species of philosophy. The two principal distinguishing marks of philosophy are said to be (1) reference¹ to the psychical; (2) universality. The introduction (pp. 1-94) strikes me as the least satisfactory part of the book, but this is perhaps due to the fact that the discussion, as is inevitable at this stage, is obviously provisional and not final: what is sought is a differentiation sufficient to enable us to proceed with logic, not an ultimate metaphysical theory of the functions of different kinds of knowledge in the whole. Nevertheless it seems rather unfortunate that, in view of the importance of the problem at the present moment, a fuller discussion is not given of the relation between logic and psychology.

A large space is then devoted to the question of abstract ideas. The author's theory on the subject may perhaps be summarised as follows: The act of abstraction is invariably the act of attending to certain elements in a concrete whole and ignoring others. A concept is "a representation of unambiguously determined content" (p. 103); it is formed by selecting certain characteristics in an image and keeping these fixed before the mind by artificial means (presumably language is meant), so that we may detect any variation at once. The concept (often though not always) has fewer characteristics than would be required to limit its possible meaning to one individual: in that case we have a universal. The author, however, is careful to distinguish between abstract and universal. In all

¹ The author, while pointing out that philosophy is not only concerned with the psychical, yet leaves this standing as one of the two main characteristics of philosophy.

cases where we attend only to certain elements in a larger whole we have abstraction but not necessarily a universal, since we may perform this act of abstraction on a single individual object. In using universals, the author holds, we always have an image of an individual object before our mind but ignore those characteristics of the individual image which are not included in the universal concept, hence these may and do vary while the concept remains the same. So we think of a class by thinking of *any* individual or individuals in it in such a way as to attend only to those points in which the individuals of the class are like (not "identical with") each other. All abstract ideas must be thought by us with a concrete substratum, but this concrete substratum is not explicitly attended to. Hence abstract ideas do not have the character of definite visual images, they are "unanschaulich". We arrive at representations which are "unanschaulich" in a narrower sense by thinking of perceptible elements as united in a relation analogous to that found in real objects, although the particular elements in question have never been given as united in that way (p. 331 ff.). Thus we may think of a chiliagon as a figure in which a thousand lines are united in the same manner as the five sides of a pentagon. We are able even to think contradictions in this way, e.g., we can think a round square by thinking round and square as united in the same way as experienced attributes are always united in a subject.

So the author's view would, it seems rightly, make the distinction between abstract and concrete ideas one of degree, because we can never attend equally to all aspects of a concrete object. Visual images certainly have an indefiniteness not found in physical objects, so that all their aspects are not clearly individualised, but I should have liked to know how the author would deal with abstract terms which refer to non-sensible objects like value, necessary connexion, logical opposition. Such ideas are surely fundamental enough, expressed as they are by such simple, elementary terms as "good," "must," "but," yet they seem to constitute a far more difficult problem than those abstract terms which refer only to selections from and recombinations of perceptible elements. It seems a pity that more space was not given to the function of words in abstraction. Except for a protest against the extreme nominalist view and an argument to show that thinking is neither equivalent nor strictly parallel to verbal judging, the author does not discuss the problem, which after all seems of great importance for the subject of abstract ideas. Surely in abstract thought words often, if not always, constitute the only images that are in any way *definite*, so that their function would seem to be not merely to fix and render unambiguous an image already there, but also often to act themselves as substitutes for all other images? It is interesting for an English reader to see the importance the author attaches to Berkeley's theory of abstract ideas. Berkeley is declared (p. 142) to have spoken "the word which brings deliverance" (das erlösende Wort) in the matter of abstraction.

The discussion of relations contains many interesting points. Relations are divided into two classes—relations of similarity and relations of dependence. Necessity is classed as a relation of one-sided dependence and is stated to be of only one kind (p. 279), the difference between logical and causal necessity involving not a difference in the nature of the necessity, but only in the nature of the terms connected by it. I can find no real grounds given for this view here, whether they are intended to be given in the second volume on the Theory of Knowledge or not. The author attacks the thoroughgoing relativists, both Einsteinian and philosophical, the former on the ground that they confuse the physical means of measuring time with time itself (p. 302 ff.), the latter on the ground that relations always logically imply related terms (p. 295 ff.)

Space not permitting us to linger over the excellent account of definition and classification, we shall turn at once to the theory of the judgment. The author holds the common view that the judgment is indefinable (p. 400 ff.), its essential characteristic is that it is concerned with truth and falsehood, but this characteristic, he declares, cannot serve the purpose of a definition, since the concept of truth is not prior to that of judgment. The object of a hypothetical judgment is defined as "the subsistence of a relation of dependence," the object of a disjunctive judgment as "the object of one of the alternatives in the disjunction, which, however, is determined only *in abstracto* through belief in the completeness of the set of alternatives and through belief in their exclusion of each other" (p. 476 ff.). As regards their evidence, judgments are divided into four classes: (1) immediately evident and certain; (2) immediately evident and certain; (3) immediately evident and probable; (4) mediately evident and probable. As immediately evident and certain are counted (1) judgments of present introspection; (2) judgments of comparison where the difference is sufficiently large; (3) some judgments of necessity and contradictoriness (p. 523 ff.). The third class—immediately evident and probable—is one not usually recognised; in it the author includes—(1) judgments of memory; (2) certain general principles, namely the principles of the uniformity of nature and of the simplicity of its ultimate laws, and the law of large numbers, *i.e.*, the principle that we may count on averages with greater security in proportion to the number of instances (p. 744 ff.). To make a general comment on this classification, I should be disposed to regret the absoluteness of the distinction between mediate and immediate, certain and probable, and the absence of a distinction between the logical and psychological senses of immediate evidence. The author does a valuable service in calling attention (with Meinong) to immediately evident probable judgments, a class usually ignored. But would not many moral and æsthetic judgments also come under this category?

The author supports Meinong as to the "*Gegenstandstheorie*," which makes existence only a species of being and allows being even to falsehood. He devotes some space to answering the objection that, if falsehood has being, there are beings of whom the law of non-contradiction does not hold good. The author replies by a distinction between validity and applicability. We might say that, on Meinong's principles, the law of non-contradiction just consists in assigning to all contradictions that kind of being which belongs to falsehood and refusing to them the kind of being which belongs to truth. The author opposes the common view which makes self-contradictory concepts "meaningless" (*sinnlos*). On the contrary, he says, it is only because they have an unambiguous meaning and are not in the same category as senseless sounds like "abracadabra" that we are able to deny them, so they should be called "absurd"¹ (*sinnwidrig*), not "meaningless" (p. 558 ff.).

The treatment of the syllogistic figures needs no special comment: care is taken to show that they are not by any means out of relation to the reasoning of practical life, although they need supplementing by many forms of reasoning not recognised in the traditional logic. A discussion of inductive reasoning follows: the author expresses opposition to the enumerative view of induction, while deferring consideration of the metaphysical problem of causality to the second volume. It is pointed out that even if we already have a complete enumerative induction the discovery of necessary connexion is felt to enrich and deepen our know-

¹ The author himself uses the English, as well as the German, words to indicate his meaning.

ledge. This is illustrated by the analogy of mathematics, where enumerative induction loses its dignity and interest as soon as we attain insight into the necessary connexion behind a certain regularity. Further, necessity, it is argued, is the only hypothesis by which regularity can be explained.

The Methodenlehre, which occupies the last part of the book, deals with such topics as the distinction between explanation and definition, the requirements of an ideally systematic science, the scientific character of history, the relation of mathematics to logic, the possibility of metaphysics—but seems to suffer from the fact that these subjects can only be treated very provisionally without going further into metaphysics than the author is willing to do here. The general effect of the book should be to strengthen the conviction that the traditional, formal logic, so often derided, has not yet lost its vitality and value.

A. C. EWING.

Plotin. By FRITZ HEINEMANN. Leipzig, 1921. Pp. xiii, 318.

Dr. Heinemann's work raises issues of the highest importance which cannot be adequately discussed in a short notice. He attempts to determine the exact chronological sequence of the writings of Plotinus, to free them from unauthentic additions and so to trace the stages of the philosopher's mental development. He succeeds to his own satisfaction in fixing an unambiguous order for the various treatises and disproving the genuineness of a few among them. But it may be doubted whether the evidence on which he relies is as conclusive as he takes it to be. The raising of the critical problem is no doubt justifiable, but it is another question whether we are in a position to solve it. In some cases the evidence produced by Dr. Heinemann of references in one treatise to the discussions of another seems to me fairly satisfactory, but in others there is often room for doubt whether the alleged reference has been made out. In particular, it seems to me very dangerous to assume that the remark that a question must be considered *alibi* or *ἄλλοτερον* always justifies us in the assertion that the promised discussion will be found in a chronologically later essay. It is not clear to me that these words may not be in Plotinus, as they often are in Plato, like our proverbial references to "another time," "a suitable opportunity," a mere formula for dismissing a topic. Even if they are not, it does not necessarily follow that any essay which appears to say something about a given topic must be subsequent to one in which that topic has been spoken of as something to be dealt with "by and by." We cannot take it for granted that when a man says he will discuss a question "some other time," he can never have said a word on the subject in an earlier writing. Hence I think, though the students of Plotinus must be grateful to Dr. Heinemann for the systematic way in which he has raised this question, the complete answer to it, if it proves possible at all, will only be given after much further examination.

With reference to the problem of authenticity, Dr. Heinemann is fully justified in calling attention to Porphyry's admission that he inserted in the *Enneads* what he calls *κεφάλαια*. It is antecedently probable enough that, like other redactors of "posthumous editions," he supplied connecting and illustrative matter. But it is surely another question whether we can now undertake to detect the insertions, and Dr. Heinemann does not convince me that we can. Again, it is fairly arguable from what Porphyry himself tells us of the volumes of notes taken by Amelius, that among the essays referred by Porphyry to the days before his own association with Plotinus, a few may have crept in which are not by the master's

hand but are mere reports of oral discussions in the school or even actual compositions of disciples, Amelius himself or others. But again, when Dr. Heinemann attempts to pick out certain minor essays (e.g., iii., 9, iv., 1, i., 9, ii., 8) as examples of the unauthentic, I find his reasoning far from conclusive. Thus, to take one example, the discussion of the problem whether there are forms of "particulars" is rejected as spurious because it turns largely on the physiological question whether we can seriously hold that there is a distinct form for every individual of e.g., a litter of pigs or rabbits. Dr. Heinemann thinks such questions frivolous and holds that anyone who raised them must have been a *Medisiner*. To me it seems that the difficulty is of just the kind to test the validity of a theory, since if the theory is true, you must be prepared to face its application in detail, and I do not see why it should be unworthy of Plotinus, as I am sure Plato would not have thought it unworthy of himself, to discuss such applications. And I must protest against the curious attempt to argue that there is an antecedent probability of the presence of spurious essays among the *Enneads*, because no one now defends the genuineness of everything in the ancient "canon" of Plato's works. Dr. Heinemann should remind himself that the Platonic "canon" cannot be traced back beyond Dercylides and Thrasyllus. An edition of Plato prepared by Aristotle or Xenocrates would be of very much greater authority than the "canon of Thrasyllus". However, I cannot undertake to go properly into the question within the limits of this notice.

The general result of the inquiry, which is not really affected by Dr. Heinemann's *atheteses*, is to distinguish a number of minor sub-divisions within the three periods of Plotinus' literary activity marked by Porphyry. The main conclusions may, I think, be summarised as follows. The first of Porphyry's three periods is that in which the leading thought of Neo-Platonism, the recognition of the three fundamental principles, the One, Mind, Soul, and the order of their dependence, is gradually articulated. Dr. Heinemann's views on the chronology of the *Enneads* lead him to hold that Plotinus started from the conception of Soul, then discovered the need to assume Mind as the ground and source of Soul, and finally to work back to the One as the source of Mind. In the second of Porphyry's periods Plotinus is chiefly concerned with problems of *Naturphilosophie*, Psychology and the criticism of Aristotle. The work of the last period, the year or two before the philosopher's death, is specially given up to Theodicy and the inquiry into the nature and origin of evil. So, I suppose, we may fairly say that the thought of Plotinus moves roughly from Metaphysics through Philosophy of Nature and Theory of Knowledge to Philosophy of Religion.

In its broadest outlines, no doubt, this account of the matter is justified by Porphyry's statements about the three periods. But I feel a good deal of doubt about the attempt to trace the steps by which the "three primary hypostases" were discovered. Since Plotinus had presumably read the *Republic*, *Timaeus*, *Sophistes* and *Epistles* long before he began to write at all, I do not see why the general conception of the hypostases and their subordination should not have been familiar to him already when he opened his school at Rome, and the argument *a silentio*, that an essay which says a great deal about Soul without mentioning Mind and the One, or about Soul and Mind without mentioning the One, must have been composed at a time when the author "did not yet know of" what is not mentioned, seems to me very precarious.

I should add that the account of the sources of Neo-Platonism seems to me to suffer from inadequate familiarity with Plato and the Old Academy. Hence the influence of Neo-Pythagoreanism is detected in passages which appear rather to be allusions to the theories of Xenocrates

or even to Aristotle's notices of the early Pythagoreans than anything else, and the bad mistake is made of attributing to "contemporary Neo-Pythagoreanism" the whole doctrine of *εἰδητικοὶ ἀριθμοὶ* which we know from Aristotle to have been taught by Plato himself. A similar oversight vitiates the author's attempt to make a great deal of alleged Oriental influence of various kinds in the *Enneads*. For example, in what is said at the end of *Enn.*, V., 8, 13, about a God who is *δεδεμένος ἐν τῷ μένειν* and his "child" (*παῖς*), the writer sees the influence of "Judæo-Christian Ideas," and speaks of a *Gottvater* and *Gottsohn*, with obvious allusion to the Christian Trinity. But in fact the word *δεδεμένος* shows that there is a reference to the "binding" of Cronus by Zeus, and the immediately following introduction of the word *κόπος* further indicates a reference to the sportive derivation of *Κρόνος* from *κόπος* and *νοῦς* in Plato's *Cratylus*. Thus the *παῖς* of the passage is Zeus, who, as the leader of the great progress of the gods in the *Phædrus* stands for the universal soul, and the "father" Cronus, who is *δεδεμένος ἐν τῷ μένειν*, is Mind. In the very next sentence Plotinus refers to the father of this father, *i.e.*, Ouranos, who stands for the One—a point missed by Dr. Heinemann. The father and child are thus the second and third, not the first and second, members of the Plotinian triad, and the whole supposed resemblance with "Judæo-Christian" ideas is delusive. We are really dealing with the standing Neo-Platonic interpretation of the theogonical myth of Hesiod. Other instances of supposed Oriental influence in Plotinus seem to me almost equally dubious. And I should like to protest against Dr. Heinemann's trick of never translating but only transliterating the word *λόγος*. The effect produced is to suggest very strongly some sort of connexion with Philo of Alexandria and perhaps with the Johannine writings and the Hebrew "wisdom" literature, and this is all to the good of a partisan of the "Oriental influence" theory. But it deserves to be considered whether all the uses of the word *λόγος* in Plotinus may not be sufficiently accounted for by one of the two senses familiar in Plato and Aristotle, "discourse" and "formula," without any appeal to non-Hellenic influences of any kind. It is significant that though Soul is often enough spoken of by Plotinus as the *λόγος* of *νοῦς*, *νοῦς* itself, the second hypostasis, is not called *λόγος* or the *λόγος* of the One. But it is precisely *νοῦς* to which the name *λόγος* would naturally be given if there were really any connexion between Plotinus and Philo.

A. E. TAYLOR.

Mental and Scholastic Tests. By CYRIL BURT. London: P. S. King & Co., Ltd., 1922. Pp. xv + 432. 21s.

This is perhaps the most important work on educational psychology ever published in England, important not so much for what it does as for the method used in doing it, and the promise of future progress which that scientific method gives. It presents the results of Mr. Burt's work as a psychologist among London children, and includes an English standardisation of the Binet Tests; a set of Reasoning Tests specially devised by Mr. Burt; a record of standard performances in the ordinary school subjects such as reading, writing, arithmetic and drawing; and many group tests for application to whole classes of children as a preliminary to individual measurement. The comments on teaching methods and on school organisation which are scattered through its pages are worthy of the most careful consideration by teachers and administrators. In the memorandum which forms the middle part of the book, of which the central problem is the line of demarcation of mental deficiency, every page

contains material and thought which elsewhere would form a whole scientific article. Immense labour has gone to the amassing of the material. In Table III. alone there is presented the result of years of actual testing, day after day, of individual children. In numerous other Tables there is represented at least an equivalent period of mathematical and arithmetical calculation. To the direction of this labour and the expression of its outcome there has gone much thoughtful insight and inventive fancy. If I could command phrases which would more adequately convey my opinion of the value of this book, I would use them: and I turn to its details, and even to what appear to me its occasional faults, only after I have tried to give as much emphasis as possible to its outstanding importance.

It is the standardisation of the Binet Tests which has attracted most attention, the only such standardisation carried out on a large scale in this country. Mr. Burt has deliberately kept as close as possible to Binet's original procedure, even where he does not approve, but has reclassified the tests (including those of 1908 as well as those of 1911) into new age groups suitable for London children. In doing so he has indeed made a new individual study of each test, and in particular he has improved the statistical basis on which the age-assignment of a test is decided: his paragraph on page 140 clears up entirely a point on which others have differed from sheer lack of lucid statement of the problem. On the preceding page, however, where a diagram of the sequence of tests is given, Mr. Burt is perhaps not so happy: and not only to "the lay reader" (to quote his footnote) will that diagram "probably be the more intelligible, the less it is explained".

The most fundamentally important contribution here made to the study of the Binet Tests is on pages 182-183, where Mr. Burt shows that, in 300 cases examined for this purpose, these tests were more influenced by school attainments than by intelligence. He finds the regression equation connecting the child's actual age with the ages according to the Binet scale, the School standard, and Burt's Reasoning Tests respectively. (Mr. Burt is perhaps justified, from a study of his partial correlation coefficients, in calling this last quantity intelligence *tout court*, though there is some danger that the incautious reader will forget exactly what "intelligence" stands for on these pages.) This equation shows that "in determining a child's performance in the Binet-Simon scale, intelligence can bestow but little more than half the share of school": a very important conclusion which should as soon as possible be tested by a repetition of the experiment under other circumstances.

It should not be assumed that the Binet Tests are thereby utterly condemned. A Binet enthusiast might indeed redistribute the emphasis, and exclaim: "In these tests we have actually succeeded in getting rid of half the handicap of lack of schooling". Most other methods of testing, and especially the ordinary judgment of teacher or employer, would show a much greater dependence upon school attainment. But the conclusion seems at least inevitable that Burt's Reasoning Tests are a much better measure of the intelligence with which a child is congenitally endowed. For when age is allowed for, their correlation with school work is little more than half that of the Binet Tests.

These Reasoning Tests are the most original contribution to a highly original book: and it is a pity that only the Short Series is given. It may seem ungrateful to ask for more in a book already so tightly packed with good things: but the whole set could have been printed if a page or two had been saved in Appendix II., pages 79 to 128.

Not only teachers will find this book invaluable. Every parent should buy or borrow a copy and satisfy himself as to the position which his

child holds in a world of London children. With the Reasoning Tests he can quickly find the child's mental age, for these tests are merely given one by one to the child, who reads the question through (assisted if necessary at unfamiliar words) and takes as long as he likes to puzzle out the answer. Then there are tests in reading, spelling, arithmetic, equally easy to "administer," as the Americans say. Ask him to draw a man, and compare his efforts with the average productions here shown for different ages: to write a sentence and some capitals, and make a similar comparison with London's age-standards of handwriting.

Lastly, Mr. Burt's work gives copious evidence of a fact which demands much greater recognition among psychologists, the tremendous individual differences which exist among children. Most clearly is this seen in the two essays quoted on page 333, but it is implied everywhere and colours the whole of the work. This is a fact ever to be borne in mind in organising, and in judging the results of, our educational system. And the fear that our efforts to help the more able children often lead them into walks of life where marriage is less probable, and small families a certainty, is one which must at some time or other have created in most educators at least a passing feeling of pessimism for the future of our race.

GODFREY H. THOMSON.

Chronicon Spinozanum, Tomus Primus. Hage Comit. Curis Societatis Spinozanæ. MCMXXI. Pp. xxiv, 326.

(This volume is not on sale but is sent free to all members of the *Societas Spinozana*. The annual subscription (10s.) may be sent to Mr. Leon Roth, Exeter College, Oxford.)

WHEN it became known in the course of last year that a Spinoza Society had been formed with the co-operation, and under the aegis, of scholars such as Brunschvicg, Gebhardt, Höffding, Meijer and Pollock, and with the assiduous, urbane and learned Dr. van der Tak, well known to students of Spinoza in connexion with *De Vereeniging Het Spinozahuis*, as one of its active officials, it was felt by those interested that another, and no mean, step had been taken to promote a patient and conscientious study of the life and lore of a philosopher whose lore, though *prima facie* remote from it, is peculiarly vital for modern thought, and whose life in its austerity without asceticism has seemed to many who have not named Spinoza Master, the very model of the true philosophic spirit.

In this, the first yearly volume of the *Societas Spinozana*, a gracefully antique small quarto, reminiscent, to those familiar with the original edition, of the *Opera Posthuma* both in paper and type (which has been specially cast with that end in view), we find the editors taking a scholarly but truly catholic view of their duties. The term 'symposium' has been applied to more than one kind of philosophical effort, but we may say that the *Chronicon Spinozanum I.* is a symposium perfect in its kind. It presents a veritable banquet of good things for Spinoza scholars and Spinoza lovers. And not only is the fare tastefully, and even beautifully, served, but it is nourishing, well-chosen, and varied to suit every taste and mood.

The *Societas Spinozana* with its permanent Headquarters fixed, with a double propriety, at The Hague, and with its accredited representatives in many different countries, forges a new link of a sane and natural internationalism; and it follows, in the absence of the universal Latin of a more fortunate period, that the *Chronicon* is a polyglot production, giving, with but few exceptions, each writer's contribution in his native tongue.

It is impossible in the course of a short notice to give an adequate view of any one dissertation without neglecting others equally important, but I will refer with the utmost brevity to the more prominent. Passing over the opening thirty-odd pages which are occupied by an interesting collection of paragraphs bearing on Spinoza by notable writers in the modern period, and by other prefatorial matter, we come to the place of honour which is occupied by an important article by Dr. Harald Höfding entitled: "Die drei Gedankenmotive Spinozas". Together with this contribution we must class that of Sir Frederick Pollock (the British representative of the Society) dealing with Spinoza's political theory and its relations with those of Hobbes and Locke; and also that of Prof. Léon Brunschvicg: "Sur l'interprétation du Spinozisme". Further dissertations of an allied kind are contributed by Dr. J. H. Carp ("Naturrecht und Pflichtbegriff nach Spinoza") and by H. A. Wolfson ("Spinoza's Definition of Substance and Mode,") who promises us in a footnote a volume, which I hope will not be long delayed, on: *Spinoza, the Last of the Medievals*.

One of the very interesting ways in which the *Societas Spinozana* promises to fulfil its purpose is by re-issuing, as far as possible in facsimile, rare works and documents connected with the life and philosophy of Spinoza. A generous section of the present volume is devoted to this attractive undertaking, Dr. Willem Meijer's article: "Drie ambtelijke stukken betreffende op Spinozas levensgeschiedenis" giving the text of the papers (which relate to Spinoza's inheritance, to his life as a plain citizen, and to his sister's claim to his effects) being amplified by actual reproductions in facsimile of the documents themselves. This is immediately followed by an excellent facsimile, occupying ten pages, of a letter by Nicolaus Steno, a Danish physician mentioned by Spinoza in his well-known reply to the injudicious Albert Burgh. The letter, aimed against the *Tractatus Theologico-Politicus* and published in Florence in 1675, is notable for the wording of its title: "Ad novæ philosophiæ reformatorem de vera philosophia epistola". Lastly, in this sort, Dr. N. Japikse prints, not in facsimile, three letters of Francis van den Ende to John de Witt.

Among the remaining articles I must name the valuable contribution of Stan. Dunin Borkowski on: "Der erste Anhang zu Spinozas Kurzer Abhandlung"; Dr. van der Tak's informative article on Dr. Lewis Meyer; Professor Ignace Myślicki's long and enthusiastic, but in my opinion not very impressive, attempt to show Spinoza as a debtor to Jean Jonston (1603-1675), a Pole of Scottish origin, not only for the pantheistic cue but also for the geometrical order of proof; and last, but by no means least (many may judge it the greatest), the very full and important article by Dr. Carl Gebhardt: "Spinoza und der Platonismus," with its appendix of quotations from "Dai Dialoghi d'Amore" of Leone Ebreo.

In complimenting the editors of the *Chronicon* on their fine production, and on the relative scarcity of misprints (especially considering the greater difficulties of a polyglot volume), I desire to make special reference to the beautiful facsimile of the portrait of Spinoza which graces this volume, no less than it does some few copies of the first edition of the *Opera Posthuma*. As my own copy of the *Opera* is, unfortunately, not one of these, I am unable to compare the present print with the original; but it is larger than the reproductions of Pollock and Wolf, and as the general effect is also much finer in quality and tone, as well as in suggestion and expression, it will be valued by its possessors correspondingly.

H. F. HALLETT.

Proceedings of the Aristotelian Society, 1921-1922. N.S., vol. xxii.
London: Williams & Norgate, 1922.

Dr. Schiller's presidential address has for its subject 'Novelty'. The address deals first with the fact of novelty and the necessity of recognising this fact, then with our reluctance to recognise it, and finally with the consequences which an adequate recognition of it would involve for logic, metaphysics, and a religious view of the world. Unfortunately Dr. Schiller does not tell us clearly how much he takes to be included in the nature or meaning of the novelty which he wants us to recognise more adequately. Perhaps he would say that we can hardly expect him to state conclusions when he is only pleading for inquiry. But the point is that the cogency of his argument about the insufficient recognition of novelty depends largely or wholly upon an understanding as to what this novelty amounts to. At one time he seems to be contrasting novelty with bare repetition. Mental process or any other process, he urges, "does *not* repeat itself absolutely, but only with a difference" (p. 3). But novelty in this sense surely does not lack recognition. No one, for instance, could have spoken more emphatically on the subject of bare repetition than Bosanquet; and he, at any rate, would not assent to the view which Dr. Schiller ascribes to "the more progressive logicians," that scientific procedure rests (in some sense) "on a negation of novelty" and explains the new by reducing it to a mere "case" of the old (p. 9). At other times, however—as when he is speaking about creation out of nothing—Dr. Schiller seems to take novelty as implying an element of sheer discontinuity and unaccountableness. These two interpretations of novelty are very different, and until we have decided between them we need hardly feel driven to conclude that the "issue as to the ultimate validity of Novelty seems to resolve itself into a question of valuation" or individual choice (p. 22).

The present volume contains more papers than usual on subjects that lie rather off the beaten track pursued by the average student of philosophy. There are, for instance, papers on Indian philosophy by F. W. Thomas, and S. N. Dasgupta. These papers, however, are likely to be more interesting to the non-expert reader than such papers sometimes are, and incidentally they refer to points of resemblance between Indian and European thought. Then there is a group of papers dealing with subjects of a mathematical and scientific kind. Among these the first place must be given to a Discussion on the philosophical significance of the theory of relativity, in which Prof. Wildon Carr maintains the thesis that the theory is in accord with neo-idealism, and in disaccord with neo-realism, while three other writers, in commenting upon his argument, are practically agreed in seeing no necessary connexion between Einstein's theory and the philosophical controversy. Prof. T. P. Nunn thinks that the argument for the thesis involves some misrepresentation alike of neo-realism and of Einstein's theory. Prof. A. N. Whitehead is inclined, both here, and in a later paper in which he returns to the subject, to make some concessions to the idealistic view, but these do not affect his broadly negative attitude to the thesis. The other papers in this group are as follows: one on 'Geometry and Reality' by T. Greenwood, which considers the relation of geometry to physical science in the light of recent views as to these sciences; one on 'Physical Space and Hyper-spaces' by F. Tavan, which professes to prove the physical reality of space of more than three dimensions; and, finally, a paper marked by Bergsonian sympathies 'On the Limitations of a Knowledge of Nature' by J. Johnstone, the main point of which seems to be that great changes in scientific outlook represent a sort of biological 'mutation' of a spontaneous and undetermined kind.

Passing now to papers of the more usual sort, we have first an elaborate and interesting one by H. J. Paton on 'Plato's Theory of *Eikasia*,' the mental process or faculty signified by the lowest segment of the Divided Line. "*Eikasia* is the first ingenuous and intuitive vision of the real. Its object is simply what appears, τὸ φαινόμενον. . . . For it there is no distinction yet made between the real and the unreal" (p. 76). It is identical with the *aischēnos* of the first part of the *Theaetetus*, and it includes the whole sphere of art. Mr. Paton endeavours not merely "to explain Plato's meaning" but also "to defend it". A paper on 'Standards and Principles in Art' by A. H. Hannay seeks to find an escape from the alternative of an external system of rules for aesthetic judgment, on the one hand, and an admission of the mere subjectivity of taste, on the other. A paper by Prof. Hoernlé urges, first, the importance for the theory of knowledge of the distinction between first-hand and second-hand knowledge, and, second, the need for dealing with the differences of terminology by which philosophical discussion is perplexed. In a paper on 'Realism and Values,' Miss Margaret McFarlane gives an account of the views about value held by Moore, Perry, and Alexander, and adds some critical suggestions. The remaining paper by Mr. Douglas Ainslie deals with Croce's 'Historiography,' but seems hardly fitted to convey any very clear ideas on the subject to a reader unacquainted with the work under discussion; perhaps Mr. Ainslie takes some previous acquaintance with it for granted, and possibly the "celebrated paradoxes" of Croce himself may be responsible for some of the obscurity.

H. B.

La Légende Socratique et les Sources de Platon. By EUGÈNE DUPRÉEL. Brussels: Robert Sand, and London: Oxford University Press, 1922. Pp. 450.

The worst of becoming critical about a tradition is that sooner or later some of the critics are sure to lose their heads, and to repudiate whatever forms part of the tradition, simply as such. So there are those who cannot realise how remarkable Shakespearian drama is without concluding that it must have been written by Bacon, or who cannot abandon the plenary inspiration of the received text of the Gospels without denying the historicity of Jesus Christ. It is to be feared that Prof. Dupréel belongs to this class of minds, and is as perverse as he is ingenious. Essentially he is a disciple of Prof. A. E. Taylor, who is the only British student of Greek philosophy he appears to know, and whose *Varia Socratica* he regards as having shattered the traditional Socrates. But having had his faith thus upset, there are no lengths to which he will not go. So he goes far beyond Socrates, who, so far from being the inventor of the Theory of Ideas artistically Boswellised by Plato, becomes for him a myth or literary fiction, constructed by writers whose creations did not aim at historic truth. He was "neither the man nor the thinker the legend makes him" (p. 412). He may not have been a bigamist, as reported; but it is as likely that he was married to Myrto as to Xanthippe (p. 417). We really know nothing about him, not even that he took an overdose of hemlock, since his execution is merely a philosophic variant on the fate of Antiphon (pp. 419, 424). As for Plato, he was merely the *littérateur* of a decadent age and had no philosophy of his own: he put into sonorous prose the great thoughts of predecessors who belonged to the Great Age of Greece, the fifth century B.C. The great thinkers of that age were the Sophists, Gorgias, Protagoras, Prodicus, and Hippias. Especially the latter two. Prodicus was the great moralist, Hippias the great logician,

or rather philosopher of science (p. 433), in whom the metaphysic of Aristotle and his criticism of idealism are substantially anticipated. The premisses for these remarkable conclusions are nearly all extracted from Platonic dialogues which are analysed in great detail. But it is noticeable that M. Dupréel draws more upon the lesser and less authentic dialogues, like the *Greater* and the *Lesser Hippias*, the *First Alcibiades* and the *Cratylus*, than upon the great 'dialectical' group of the *Theætetus*, *Parmenides*, and *Sophist*. And his arguments, though often ingenious, frequently rest on very slight evidence, and are never cogent. If specialists in the history of Greek philosophy do their duty, they will be duly considered and confuted in detail, without much difficulty, and possibly with benefit to the tradition, which after all itself also rests upon pretty insecure foundations.

Nevertheless it would be unjust to represent M. Dupréel's book as a heap of mare's nests. My own feeling is that it was worth writing, though it does not make out its case. Thus, when he argues that the thought, like the deeds, of the fifth century must have surpassed that of the fourth, he forgets the 'Owl of Minerva' and the 'lag' of thought in reflecting on the course of reality. When he insists on the intellectual achievements of the fifth century, he overlooks that the tradition had already recognised the importance of the Sophists as well as of Socrates. Indeed A. W. Benn had put Hippias almost as high as M. Dupréel. And M. Dupréel himself strangely neglects to exploit Protagoras. This is a pity, because it not only leads him wrongly to assign to others allusions in Plato which are plainly aimed at Protagoras, but weakens his general argument. There seems to be no reason for it, except a dislike of relativism. Still more serious, perhaps, is M. Dupréel's failure to suggest a motive for the construction of a Socratic 'legend'. He seems to think that the fourth century writers on philosophy simply said to each other 'Come now, let us make a Saint after our own heart and in our image!' (p. 426). But that does not explain why Plato and Xenophon should have composed the *Memorabilia* of Socrates rather than of themselves.

Yet M. Dupréel is probably right in thinking there is something queer about the Socratic legend. The real clue, however, would appear to be political. The 'impiety' of Socrates was a pretext, like that of his predecessors, Protagoras and Anaxagoras, and his condemnation was an incident in Athenian party strife. When the Democrats returned under Thrasylbulus, they had had to grant an amnesty, and so could not attack their enemies directly. But they were none the less thirsting for revenge on the intellectual champion of oligarchy and friend of Critias and most of the Thirty Tyrants, who had so persistently undermined the theory of democracy by advocating expert knowledge and skilled government. For that was the political implication of 'excellence = knowledge'. So they got rid of him; as a dozen years before, under the Fourhundred, the oligarchs had got rid of the pestilent democratic theory of Protagoras, which seemed to introduce universal suffrage into the realm of ideas, and as the enemies of Pericles had driven out his friend Anaxagoras. But they can hardly have foreseen that the literary circles in Athens, being bitterly antagonistic to the *demos*, would thereupon set themselves systematically to elevate their martyr into the greatest philosophic figure the world had ever seen. They had the good fortune to enlist the services of one of the world's great writers, and, as so often, the legendary hero has become the real man. We may suspect his authenticity, but Plato's work stands, and we cannot put any one else in the place of the Socrates he has created.

F. C. S. SCHILLER.

Remembering and Forgetting. By T. H. PEAR, M.A., B.Sc., Professor of Psychology in the University of Manchester. London: Methuen & Co., 1922. Pp. xii + 242. Price 7s. 6d. net.

For two reasons this book is particularly interesting. In the first place, Prof. Pear has a thorough knowledge, not only of recent advances in psychopathology, but of the technique and results of modern psychological experiment. He is also sympathetic to both developments, and consequently able to bring them into closer relationship than most recent writers upon these subjects. In the second place, this is a book largely about images, by an author who must have most excellent opportunities for studying these troublesome objects of attention at first hand. I know of no other book of the kind which, in a small space, collects so many analogies, paints so many pictures, and generally revels in so many vivid illustrations as are here to be found. No sooner, apparently, does Prof. Pear contemplate any proposition whatsoever, than immediately there float before his mental gaze almost any number of pictures more or less immediately connected with the proposition. Since the author possesses also a very fluent vocabulary and no disdain for unconventional modes of expression, this helps to make *Remembering and Forgetting* unusually attractive to read.

Yet I think that the very wealth of imagery may easily help to make the work difficult. It certainly has done so in my case. Sometimes the author seems to be even more interested in elaborating his ornamentation than in considering its exact use for the purposes of his argument. Sometimes his method of flitting from picture to picture is not a little distracting; for the fact is, that often only a visualiser can clearly understand how the images of a visualiser are connected together.

To the psychologist, the first three chapters—on *What is Memory?* on *The Apparatus of Remembering*, and on *The Percept and the Image*—will be disappointing. Everything in them has been said before a number of times, though generally with less skill. Particularly the reiteration of all the commonly recognised distinctions between the percept and the image only helps to show how barren of further results this purely descriptive type of psychology can be. Here, perhaps, is the place to add that Prof. Pear is occasionally a little less critical of experimental material than he might be. Perky's experiments, in which images and percepts were apparently confused, are quoted without adequate remarks concerning their difficulty and probable limitations. A few years ago I tried to repeat them—using adults as observers—with striking ill-success. The only point is that in this place, and perhaps in a few others, it would have been well to introduce a few guarding remarks.

With the chapter on *The Functions of the Image* the book quickens enormously in interest, for Prof. Pear is now somewhat less faithful to the beaten track. There follow four extremely good chapters on dreams—one an introduction to the modern study of dreams, a second on the mechanism of dreaming, a third dealing with Rivers' view of the dream, and a fourth giving an illustration of dream analysis. In all of these the author's remarks on the relation of image processes in sleep to image processes in waking life are important and helpful.

Naturally there are difficulties. To take one case only. Freud has said that the affect is the only true thing in the dream. Prof. Pear accepts this at once, and, without discussing what, if it is to be accepted, this statement can possibly mean, he goes on to discuss why it is that ordinary sensory images are evanescent and the power of using them distributed capriciously among individuals, while the power of recalling pleasure and unpleasure is stable and equally shared by us all. His explanation is a biological one. If the ability to recall pleasure and unpleasure varied

widely from person to person: "one could scarcely understand how learning by experience of the primitive 'trial and error' kind could come about". There is a great deal wrapped up in this statement which ought to be set forth in detail.

I confess that it seems to me that Prof. Pear is sometimes too ready—like many other contemporary psychologists—to put a burden upon affective processes which they are ill able to bear.

The best chapter of all is the final one on *How we Forget?* Nobody could read this without receiving many hints for his further study. It is a great pity that Prof. Pear did not develop more fully his idea of the connexion between forgetting and the formation of sentiments. The notion is a very valuable one, and it is greatly to be hoped that the author will return to it in the near future.

There is an appendix containing chapters on Synaesthesia, Number Forms, The Intellectual Respectability of Muscular Skill, and on recent experimental work on the nervous system.

This book is undoubtedly one of the best of the recent relatively untechnical publications on psychology. It will be found helpful and full of interest alike by the trained psychologist and by the general reader.

F. C. B.

Religion and Modern Thought. By GEORGE GALLOWAY, D.Phil., D.D.
Edinburgh: T. & T. Clark, 1922. Pp. vii, 342.

This volume contains ten essays, four of which have been previously published. The spirit and motive of these essays conforms to the general title, and Dr. Galloway, despite the wide range of his enquiry, has something shrewd and frank and pertinent to say on a host of specific topics. Nothing seems to disturb his competence, whether he is dealing with theology, general philosophy, psychology, history, comparative religion, or institutions; and he seems ready and anxious, always, to meet serious criticism on its own ground.

As I have not the space for a tithe of the questions raised I shall content myself with a few brief comments upon two of the problems which recur in these essays. These are (1) the relations of philosophy and theology; (2) the interpretation of 'religious experience'; and I have chosen them partly on account of their high philosophical importance, partly because I am doubtful of some of Dr. Galloway's views about them. It is scarcely necessary to explain that doubts of this sort are irrelevant to one's estimate of the merits of Dr. Galloway's work.

(1) In the first essay (his inaugural address), and in some of the others, Dr. Galloway appears to be unjustifiably cautious upon this head. As a theologian, he is grateful for the philosopher's help provided that the philosopher is not a materialist and is not too much of an idealist. The philosopher, on the other hand, should never forget that religious experience forms part of his data. These friendly relations, to be sure, ought to result in a most politic harmony between a Faculty of Arts and a Faculty of Theology; but the point is not quite so simple, as Dr. Galloway himself admits very handsomely when he comes to grips with the real issue. In the seventh essay (which I venture to think the best) he explains that religious *doctrines* must stand in some vital relation to Christian experience (180); that it is necessary to harmonise the world-view expressed in the ecclesiastical creeds with that which is the common property of modern cultivated minds (183); that the attempt to delimit two spheres involves a movement of the mind beyond them to a comprehensive standpoint (185); and even that the truth of theology would be

philosophy (211). That is why Dr. Galloway in this essay proceeds with a philosophical argument designed to elicit a truth (which, being a truth, is neither philosophical nor theological) through a comparison of the Hegelian and the Ritschlian standpoints.

It is obvious, indeed, that if religion claims the whole of a man, and if it claims to be justified by the truth and the sanity of its cosmic outlook, then it *is* a philosophy (incidentally at least) and so may have rivals in this sphere.

(2) There seems to be an ambiguity in certain of Dr. Galloway's appeals to 'religious experience'. If theology, properly speaking, were *only* the expression of religious experience—a sort of religious resonance akin to an interjection—then it would follow that every variation and development in religious experience would express itself in a different theology, and that there could be nothing fixed or final in that science although there might be some measure of continuity. If we suppose, however, that the framers of creeds were right in believing, not only that they were expressing human experience, but that they were enunciating truths (principally about divine things) it is plain that the argument falls. The question in this case is whether or not these statements are true; and the office of religious experience in this regard is to bring evidence to bear upon the point. Once true, always true: does not this apply to theology? That there is a God; that Christ is His son; that there is a supersensible world as well as a sensible: if these things are true, are they not finally so? The development of religious experience, it is true, may teach us to see more than St. Paul did, or rather, perhaps, to see differently. But that is a different question.

I do not suggest, of course, that Dr. Galloway is not acquainted with these truisms, but he seems to me sometimes to have neglected them, and sometimes (I think) to pay too much attention to *man's* religious psychology. The reason, no doubt (if I am right in this opinion) is the special purpose of some of these essays. No one knows better than Dr. Galloway that theology has to do with God, and to make what it can of man.

JOHN LAIRD.

La Notion d'Espace. By D. NYS. Brussels, 1922. Pp. 446.

Space permits no more than a very brief notice of this work, the fourth and final part of a treatise on Cosmology, by Prof. Nys of Louvain. The general standpoint of the author is, as might be expected, Neo-Thomist in metaphysics, non-committal in matters which belong to natural science. The volume falls into two parts of which the first and larger is a review and criticism of views rejected by Prof. Nys, the second an exposition of the Thomist position as he holds it requires to be stated in view of the present state of mathematics and physical science. As a critic, Prof. Nys shows acquaintance with an immense range of literature, scholastic and modern, and his tone is everywhere considerate and courteous, but there are some unfortunate omissions in his treatment for which he is perhaps not wholly accountable. Thus he makes no reference whatever to the very important work of Dr. Whitehead, and is obviously unaware that it has ever been held that "events," not "bodies," are properly the terms of spatial relations; Mr. Russell, again, is represented only by his early and (alas) hardly procurable essay on the *Foundations of Geometry*. I note also the curious inability to be fair to Kant, or even to state Kant's views with any accuracy, which seems to beset Neo-Thomists. There are several examples of this in the present volume, the most amusing

being perhaps a solemn reproduction and refutation of the argument of the thesis of the "First Antimony," which is taken to be the "doctrine of Kant"! In the main, I believe, Prof. Nys's account of his own doctrine will be found more interesting than the criticism of philosophers, scholastic or modern, prefixed to it. He is always well-informed about the developments of modern science, and it is fascinating to see what a very long way he is able to go without forsaking the type of spatial theory represented by Aristotle as improved by St. Thomas. Whether that type of theory will go quite as far as Prof. Nys believes, is a question to which, I think, the answer depends on a very ultimate issue. Is the Thomist assumption that the work of the intellect is confined to abstraction from sense-experience consistent with our possession of the mathematical concepts we notoriously do possess, or is it not? If it is, I do not see why Prof. Nys's view that "real space" is a system of three-dimensional relations of distance between bodies should not be the last word. But if it is not, we may have to fall back on what Prof. Nys would call an "extreme realist" view about space. And Prof. Nys's own definition seems to suggest the gravest doubts about the Thomist theory of the intellect. For he assumes that "the distance" between two bodies A and B is unique. But the difficulty is precisely that "*the* distance" is an unmeaning expression, so long as the terms of the relation are supposed to be bodies. If A and B are volumes at all, there is not *one* "distance between A and B," but an infinity of different distances. To make the expression "the distance" significant, you have to think of the "terms of the relation" as "points," *i.e.*, you have to "pass to the limit". Well, then, on the theory that abstraction is the one and only function of intellect, is it really possible to "pass to the limit"? Prof. Nys, of course, assumes that it is possible, as a Thomist is bound to do. But I wish he had at any rate seen the difficulty and attempted to deal with it. His book is very interesting and suggestive, but I cannot see that he does anything to meet the obvious criticism that "abstraction" can only leave us in possession of what was already contained, along with other material, in the data from which abstraction is made, whereas, when we "pass to the limit" what we reach is always the concept of a limit *not* contained in any of the data but transcending them.

A. E. T.

Common-Sense Theology. By C. E. M. JOAD. London: T. Fisher Unwin, Ltd., 1922. Pp. 288. 21s. net.

Mr. Joad's new volume is a disappointing instance of misdirected native ability which illustrates afresh that sometimes, in literature at least, nothing fails like success. There is a superabundance of excellent material; but it is sacrificed to hasty planning and faulty execution. The author has apparently followed his own maxim—"Don't reflect upon your impulses; obey them" (p. 283); but the inevitable result is that fluency often becomes loquacity, and the extensive range of subject matter quickly loses the stimulus of novelty. Form and style are "popular" in the bad sense of that fine democratic word; for philosophic dialogue, if it is to be carried to any length, demands the genius of a Plato; although it must be said, in fairness to Mr. Joad, that he fully appreciates the risk attending his venture. A writer's choice of title, again, is purely his own affair. But his justification of it is another matter; and here "common-sense" and "theology" bear neither their ordinary nor any recognised technical significance. The volume "is not about God" except in so far as "He is called the Life Force"; while "common sense (is) the attitude which refuses to credit Him with any qualities beyond that one which

He manifestly exhibits". "For the existence of the generally accepted Divine attributes there is no evidence, with the exception of that of creativeness" (p. 7). Comments upon such crude dogmatism would, I venture to believe, be out of place in *MIND*, which may still confine itself to "ploughing the thankless and wearisome sands of metaphysical speculation".

It is plainly evident that Mr. Joad has fallen under the influence of a "complex" familiar enough in the history of literature; all the critics are wrong, and most philosophers narrow-minded or prejudiced; the latter, however, being doomed to speedy extinction. From this standpoint he undertakes a survey of nearly every recent movement in thought and every classic system of philosophy. The criticism is lively enough, but painfully shallow; too often a difficulty is met by a joke or a gibe—at the best, as on page 91, by "a pure guess". The psychology is of the type for which a "sensation becomes a perception," and "mind in the last analysis is made up of sensations and the images which sensations cause" (p. 260). Truth, again, "in accord with the dictates of common sense (is) correspondence with external fact" (p. 265); while the method of overcoming the difficulties of Bergson's and Geley's positions is to assert categorically that "the Life Force is outside matter, and does not create matter . . . finds matter ready made and uses it for its purposes" (p. 271); why "plough the sands" any further?

I regret to dwell so much on the defects (as I regard them) of the present volume; for, despite them all, it contains plain evidence that the author can produce much sounder work, if only he will not attempt to write too hurriedly, and will credit those who lack his own native capacity with some degree at least of honesty and sincerity of purpose.

J. E. TURNER.

The Supremacy of Spirit. By C. A. RICHARDSON, M.A. London: Kegan Paul, Trench, Trubner & Co., 1922. Pp. vii, 159.

In this comprehensive little book Mr. Richardson attempts to explain the contentions of his *Spiritual Pluralism* (reviewed in *MIND*, Jan. 1921) 'to a wider public than that consisting only of people concerned with philosophy professionally'. He seems to be well equipped for this hardy undertaking, since his argument sustains its interest (and indeed proceeds with an almost incredible smoothness) although it deals with the toughest of tough matters.

The second (and longest) chapter in the book provides the author's defence of the supremacy of spirit, the general line of the argument being that nineteenth-century materialism has gone by the board, and that 'it is becoming increasingly apparent that the one type of entity which must be retained, in the monism to which we are tending, as the sole type of real existent, is essentially spiritual in nature, and not material'. This is followed by chapters on Space-Time; Immortality and Freedom; Body and Mind; Conscious and Subconscious; and on Psychical Research.

I have difficulty in seeing how the fundamental position is supposed to be proved. The nearest approach to a direct proof appears to occur on pages 62 and 63 where we are told "Experience thus consists in the interaction of the subject with other subjects. . . . Sensation is *therefore* the reaction of the subject to the action of other subjects. . . . Hence we are justified in calling it the appearance of the latter to the former." I should like something more solid than this 'hence' and this 'therefore'. I wonder, too, whether it is my profession that makes me doubtful of so

many of the consequences. Mr. Richardson says in effect that spirit is free in 'the only real sense of the word' because each spirit is unique. Just like the number 2, in fact. It is also timeless and therefore not mortal—again like the number 2. Indeed we are told that 'the problem of immortality is really based on contradictory conceptions. Logically no such problem exists so far as spirits are concerned, though there is a real problem, which can be stated in terms of experience, corresponding to the question of the survival of bodily death'. This seems difficult. As I gather, the self is a unity, therefore not divided, therefore non-successive; but where does birth or survival come in?

Mr. Richardson has had a piece of very bad luck in his chapter on *Psychical Research*. Five months after the date of Mr. Richardson's preface Dr. Fournier D'Albe's book appeared and proved to the satisfaction of most of us that the late Dr. Crawford's 'ectoplasm' was in fact muslin and that the tables were 'levitated' by foot.

JOHN LAIRD.

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- Intelligence Tests and School Reorganisation*, by L. M. Terman, V. E. Dickson, A. H. Sutherland, R. H. Franzen, C. R. Tupper, and G. Fernald, London, G. G. Harrap & Co., Ltd., pp. viii, 111, 4s. 6d.

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- H. Klaatsch, *The Evolution and Progress of Mankind*, trans. by J. McCabe, London, T. Fisher Unwin, Ltd., 1923, pp. 316, 25s.
- L. Thorndike, *A History of Magic and Experimental Science During the First Thirteen Centuries of our Era*, 2 vols., New York, The Macmillan Co., 1923, pp. xl, 835; vi, 1036, \$10.
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VII.—PHILOSOPHICAL PERIODICALS.

BRITISH JOURNAL OF PSYCHOLOGY. Vol. xii., Part 4. April, 1922.

E. C. Oakden and **Mary Sturt** in "The Development of the Knowledge of Time in Children" give an account of tests applied to school children to discover the understanding at different ages of "conventional time," including the significance of dates, the characteristics of periods, and the various time indications used in everyday life. A marked development is noted about the age of eleven years. Passing beyond the ordinary time words to an understanding of chronology and the arrangement of historical epochs is a matter of some difficulty. Children find it difficult to arrange dates correctly, and apparently attach little importance to them when required to assign them to persons, or to arrange historical characters under their proper dates. When required to date an epoch they prefer to give the name of some famous contemporary character. In dealing with historical epochs those which are most remote from our own time are most readily distinguished. This seems to be due to the fact that the earliest distinction is between the present and a past which is mainly negatively characterised. In this past subdivisions are at first ignored: they are only attended to after the age of about eleven years. It is inferred that in the teaching of history more detailed descriptions of characteristics of various periods should be given.

Otto Lipmann in "The School in the Service of Vocational Study" discusses the value and methods of estimating at school age the psychological endowment of the pupils. He distinguishes under "endowment," capacities and interests, and the material and formal aspects of endowments, and he emphasises the difficulty of estimating at school age the permanent interest in the material concrete details of an occupation. He questions the correlation of ability and "willingness to use ability," and maintains that interest especially is liable to change. The judgment of the children themselves as to the occupation they would like is especially unreliable because they are influenced by the attraction of objects and material with which they would have to deal rather than the nature of the work they would have to carry out. The writer refers to the value, for higher occupations, of general intelligence as compared with specific abilities, and the possibility of compensating by greater general intelligence for lack of specific abilities or perhaps by substitution of one type of work for another. He suggests that the teacher should not give advice as to occupation, but only supply information to expert vocational advisers who would also consider the economic aspect of the question. His experience at the Institut für angewandte Psychologie, Berlin, makes the author sceptical as regards the diagnostic and prognostic value of single experiments unsupported by school observations, combined with which, however, they may be of great value. Herr Lipmann suggests further that the school might also afford instruction, *e.g.*, by cinematograph, of the actual work involved in various occupations, never losing sight, however, of its one aim—the educational one.

Alan H. Gardiner in "The Definition of the Word and the Sentence" emphasises the social functions of language, and the significance of the

attitude of speaker to listener. He offers a definition of language—the following: “language is the name given to any system of articulate symbols having reference to the facts of experience, whereby speakers seek to influence the minds of listeners in given directions”. He maintains that a word is an articulate sound-symbol in its aspect of denoting something which is spoken about; and a sentence is an articulate sound-symbol in its aspect of embodying some volitional attitude of the speaker towards the listener, the meaning of any sentence being what the speaker intends to be understood from it by the listener. **H. Hartridge** in “A Vindication of the Resonance Hypothesis of Audition” offers further evidence in favour of the view that the probable physical properties of the resonators of the organ of Corti can account for the sensation of tones varying from the highest to the lowest; and also that the number of vibrating elements in the organ of Corti is more than sufficient to account for the total number of different pitches found experimentally, even if the “all-or-none” law is assumed to hold in the case of the cochlear nerve.

C. A. Richardson contributes a “Note on a method of Estimating the true Stanford-Binet Intelligence Quotients of Adults”. Vol. xiii., Part I. July, 1922. **William Phillips** contributes an article on “John Locke on the General Influence of Studies”. After an examination of all relevant points in the “Essay,” “Thoughts concerning Education” and the “Conduct of the Understanding” he fails to find any explicit theory of formal training. He finds, indeed, much that is inconsistent with such a doctrine and which is in harmony with modern psychological views on the question. Locke’s emphasis on “discipline” is shown not to signify what it signifies in some educational writings. He does not think difficulty adds to the value of a study. Indeed, he believes the teacher must take pains to find out the methods that will make the process of learning pleasurable and interesting, and give the most rapid mastery over the subject studied. Nor does Locke believe that any one subject can give an adequate general training. Rather he asserts that care should be taken, in educating a pupil, to give him, while he is young, a taste for several subjects and an insight into the methods employed in them, and in this way to open his mind so as to prepare him to apply himself to one or more of them later on, if that should be found necessary. He goes further and utters a warning against the injurious consequences which may follow from too exclusive attention to one type of study, even mathematics, in favour of which he has so much to say. Locke’s lack of emphasis on the value of knowledge as compared with familiarity with method is ascribed to the fact that the development of specialised knowledge had not reached in the time of Locke anything like the stage it has reached now. His age “did not concern itself with training experts”. The writer points out a number of inconsistencies between some of Locke’s practical recommendations in the “Thoughts” and some of the psychological positions he adopts in his other writings. **Ernest Jones** in “Some Problems of Adolescence” maintains that adolescence is the true “second childhood” in which there is a recapitulation of the various phases of development characteristic of infancy (1 to 5 years) as contrasted with the stable period (6 to 12 years) in which in particular sex impulse remains latent. **C. Spearman** in “Recent Contributions to the Theory of Two Factors” makes some criticisms of Godfrey Thompson’s experiments with dice, from which the latter tries to show the possibility of a hierarchy of correlation coefficients without a general factor. Spearman argues that Thomson, while determining by chance (dice throwing) the components from which his terms are obtained by summing, himself determines the number of these terms, their position in the tabular arrangement, etc., and he determines these things deliberately, with a view to obtaining a

hierarchy. If he did not manipulate his chance data with this intention, but instead allowed chance to determine also the number, positions, etc. of the data, then there would only ensue the low correlation between the arrays already long ago predicted by the writer. Thomson's manipulation is declared by the writer to be equivalent to the introduction of a general factor. **C. S. Myers** in "Individual Differences in Listening to Music" reports an investigation following his previous research with individual tones. The paper discusses the objective aspect in the technician, and his suppression of other aspects, the absence of associations in the most unmusical and their occurrence among the musical, the relation of the character to the intra-subjective aspect, the aesthetic value of the pragmatic and objective aspects and of the intra-subjective aspect, the aesthetic value of the meaning of music and the importance of "distance" and of the "mystic" feeling. **Camille Nony** in "The Biological and Social Significance of the expression of the Emotions" discusses theories of the biological significance of emotional reactions. He concludes that the conditions required in order that the expression of the emotions might become a language include the presence of the following capacities: to react spontaneously to an emotional shock in the same way as the beings with whom we live; to be capable of self-observation and of hetero-observation, both for him who is moved and sees the effect of his emotion in others, and for the observer who sees the expression and knows its significance; to be capable of producing again, by voluntary innervation, or through the medium of representations, or by conditional reflex, the whole or part of the spontaneous emotional reactions. Other articles are "A Vindication of the Resonance Hypothesis of Audition" by **C. R. G. Cosens** and **H. Hartridge**, and "Age Standards for the Separate Northumberland Tests" by **Godfrey H. Thomson** (with two figures). Vol. xiii. Part 2. October, 1922. **W. H. R. Rivers** in "The Relation of Complex and Sentiment" contends that suppression and dissociation are the main characteristics of a complex; diffusion of a sentiment. The activity of a complex is protopathic and impulsive in character, and its strong affective aspect is another important mark. The term, however, is misleading in that complexity is not a peculiar characteristic of the complex which might even more appropriately be called a "simplex". **A. G. Tansley**, writing on the same subject, contends for the use of the term complex as including non-repressed groups of ideas bound together by a common affect, and having some degree of autonomy. "Sentiment" is regarded as applying essentially to an "affective phenomenon". Add the cognitive elements and the term sentiment admittedly becomes equivalent to complex in the wider sense. **Alexander Shand** takes part in the same symposium and insists on a distinction between complex and sentiment, the former being characterised by lack of control in reference especially to one emotion persisting beyond the appropriate situation, and the latter being a system of emotional reactions, controllable, and varying suitably according to the situation, and so not morbid. **T. H. Pear** contributes the view that a sentiment is an organised system of emotional tendencies grouped about an object, whereas a complex seems to be "a relatively unorganised collocation, sometimes almost a fortuitous concourse, of such tendencies collected about an object". Predictability of behaviour, he maintains, is the outstanding feature of the sentiment, but a conflict of two sentiments may give rise to a complex. On the same topic **Bernard Hart** holds that the constituent mental elements are linked together to form a "higher psychic unit" which has a more or less definite conative trend, and which therefore tends to influence the flow of thought and conduct in a definite direction. It is in virtue of this conative trend, and not of the common affect, that the "complex" can be regarded as a unit. The senti-

ment then becomes a species (unrepressed) of the wider term complex. A paper by **C. S. Myers** concludes the symposium. He holds that a complex comprises an "inexplicable impulse" arising from an inexplicable affect (not necessarily experienced), dependent on a forgotten situation. A sentiment feeling (as distinguished from a sentiment disposition) may grow from a complex and assume some of its characteristics, and not be marked by either "tidiness" or predictability. Nor on the other hand are all complexes morbid. **B. Muscio** in an article entitled "Motor Capacity with Special Reference to Vocational Guidance," describes a series of eight different motor tests (*e.g.*, tapping, tracing, form board) and their application to several groups of subjects. But no significant inter-correlations were found, even after considerable practice. The writer concludes that there is no "motor type". Terms such as "motor dexterity," or "practical ability," are misleading. Motor capacities are relatively independent of intelligence. For since motor tests do not correlate with one another positively to any appreciable degree, they cannot in general correlate positively with any other tests, and therefore not with intelligence tests. From the point of view of vocational guidance, the practical conclusion is that every occupation which consists mainly of a routine performance of specific movements will require specific vocational tests; that is, motor vocational tests for a given "motor" occupation must be tests of just those motor capacities that function in that occupation. Other articles are: "A Note on Some Dreams of a Normal Person," by **Mary Sturt**; "A Vindication of the Resonance Hypothesis of Audition, V." by **H. Hartridge**; "Suspicion," by **Alexander F. Shand**, and "A Note on Local Fatigue in the Auditory System," by **F. C. Bartlett** and **H. Mark**.

THE JOURNAL OF PHILOSOPHY. xix. (1922), 19. **A. O. Lovejoy**. 'Time, Meaning, and Transcendence, I. The Alleged Futurity of Yesterday.' [Replies to Dewey in xix., 12, 13 and charges him with a 'pun' on the double meaning of 'object' in his proof that judgments about the past really refer to the future. Consequently the transcendence of the actually present on which epistemological dualism insists is *not* eliminated. Judgments both about the past and about the future involve "an element of a logical faith, explicit or implicit" and are incapable of 'strictly logical verification'.] **J. C. Gregory**. 'Dr. McTaggart and Causality.' [Explains, with illustrations, "the impression of hopeless irrelevance first made upon our minds by *The Nature of Existence*," and then expounds the way McTaggart tries to save the notion of causality.] xix., 20. **A. O. Lovejoy**. 'Time, Meaning, and Transcendence, II. Prof. Dewey's *Tertium Quid*.' [Between dualistic and monistic realism. If by 'monistic realism' "is meant the doctrine that in perception and thought the object known is always present immediately" and by 'dualistic realism' is meant a denial of "this universal direct presence of the thing known in the knowing" there is no basis for Dewey's 'pluralistic realism'. Actually he is an epistemological dualist in one sense of knowledge and a monist in another. If knowledge presupposes reflexion, he recognises the mediation of its object by a representative. This is dualistic. But knowledge is not complete and its truth-claim is not verified until an object immediately known is reached. This is monistic. Moreover, he uses 'meaning' in three senses, for causal implication between facts, for cognitive operation, and for recognition of the 'present-as-absent'. Nevertheless, he is right in saying that "imaginative recovery of the bygone is indispensable to successful invasion of the future".] **J. J. Toohey**.

'The Predicate Term.' [Continues a dispute with A. L. Hammond about the distribution of terms. Cf. xviii., 12 and xix., 5.] **J. L. Mursell.** 'Behaviourism and the Programme of Philosophy.' [Maintains that "only those individuals physically equipped for true speech can make judgments or possess knowledge," because "most if not all thinking can actually be reduced to laryngeal work".] xix., 21. **J. Dewey.** 'Knowledge and Speech Reaction.' [Behaviourism, though only at the beginning of its career, tends to over-simplified and inadequate reduction of knowing and thinking speech-reactions. The concept of stimulus-reaction implies the property of adaptation or mal-adaptation, and "there must be some break in the seeing-reaching sequence . . . to induce a diversion from the hand to the voice". It implies an auditor. "Commands, optatives, and subjunctives are the primary modes of the speech-reaction."] **H. R. Smart.** 'Professor Perry's Empiricism.' [Criticised as too naturalistic.] **W. D. Wallis.** 'Behaviour and Purpose.' ["Behaviour is not just behaviour"—for the behaviourist has a purpose—"and behaviourism is a point of view and must justify itself by its fruits," by the significance and value of its results.] xix., 22. **A. W. Moore.** 'Some Logical Aspects of Critical Realism.' [Pungent criticism showing that the essayists of *Critical Realism* do not succeed in applying their formal definition of truth or in 'leaping' from the mind to the real object by means of their 'essences,' and concluding that no doubt "this situation is 'critical'; but is it 'realistic'?"] **J. B. Pratt.** 'Behaviourism and Consciousness.' [Shows, against R. B. Perry, that behaviourism cannot explain the elements it recognises in purpose, viz., subordination of means to end and determination by the future, and that it is illogical to take it merely as a method. It must absolutely deny consciousness: for if consciousness be a genuine fact "behaviourism, which leaves it out of account, cannot be the science of mind". And if consciousness exists, it cannot be devoid of efficacy. So even as a method behaviourism fails.] **H. N. Wieman.** 'Knowledge of Other Minds.' ["It is symbolism that reveals other minds . . . because it reveals knowledge which is independent of the time, space, and cause of the immediate situation . . . it nullifies time, space, and cause by flooding the immediate situation with foreign meanings."]

"SCIENTIA". April, 1922. **G. Loria.** 'Deux grands historiens des Mathématiques.' **P. BOUTROUX.** 'Le père Mersenne et Galilée. Première partie: 1623-1633.' **W. M. Bayliss.** 'Vitalism.' [The problem of Vitalism appears to the author to be at present insoluble, for we cannot know at any point what outstanding physical and chemical phenomena may yet play a part. The dangers inherent in a tacit acceptance of a vital force are pointed out vividly. For instance, it introduces the possibility of a phenomenon failing to occur when all known conditions for its appearance are present. Scientific investigation would be futile unless the vital principle is itself capable of detection and measurement, and then it becomes merely one among the other determining events, and not a privileged one. Some of the conditions are often expressed merely as biological laws, and these are not of a kind which seems to imply the existence of a directing principle. We can hardly, moreover, suppose a principle to act in some organisms and not in others, and we cannot include it in a form which would say, for example, that the action is the most appropriate one possible, for often it is not. The danger to research involved in the acceptance of an irreducibility of vital phenomena to simpler laws, is clearly pointed out. Our feeling of security, a need for further scientific advance, is menaced. Such objections do not so much apply to

a milder form of vitalism which holds that a form of energy exists in living organisms without a corresponding existence in the non-living. The author deals also with the problem of memory, and fails to see a difference in kind between the changes in a colloidal silica system due to external conditions and the changes in our own system which lie at the basis of memory. A protest is made against the confusion introduced by the use of names derived from a consciousness of the knowing minds, however convenient this may be in description. A man of science cannot and must not try to look at phenomena from the point of view of a particular philosophical system.] **R. Ronze.** 'Le rôle de l'Amérique latine dans le monde. I. La république Argentine.' *Reviews.* *Review of Reviews.* May, 1922. **S. Zaremba.** 'Essai sur la mise au point de la théorie de la relativité.' [The author essays the difficult task of expounding the general plan of this theory without mathematical terminology, and of finding reasons which must limit our admiration for 'cette audacieuse conception de l'ensemble de la Physique.' As a preliminary, he traces the mode of building up of other comprehensive physical theories. Two problems are met at once, as fundamental, (1) the precise definition of the mathematical symbols which are to be introduced, and their correspondence, point by point, with entities which can be measured in the laboratory, and tested by numerical correspondence with the theory, and (2) precise formulation of the hypothetical relations between these numerical entities. Such a plan is only applicable if time, space, and the conception of approximately rigid bodies, are taken for granted. Additional scaffolding is needed for phenomena not purely kinematic. For instance, in classical mechanics, the notion of force, the material particle, and so forth, enter, and force can be measured. Einstein is precluded from the adoption of the plan outlined, and in fact is constrained to adopt an entirely inverse plan. His theory only derives its precision from mathematical analysis, and not before the use of such analysis. It leaves to its later stages the task of interpreting the physical significance of the symbols it employs. He concludes that the theory is 'pour le moment, une théorie mathématique qui, faute d'avoir un sens physique précis, ne comporte aucune vérification expérimentale.'] **P. Boutroux.** 'Le père Mersenne et Galilée. Deuxième partie: 1633-1642.' **V. Giuffrida - Ruggieri.** 'La phylogénie humaine.' **S. Nearing.** 'Workers and Owners.' **R. Rouze.** 'Le rôle de l'Amérique latine dans le monde. II. Les courants pan-Américains dans l'Amérique du Sud.' *Reviews.* *Review of Reviews.* June, 1922. **L. E. Dickson.** 'The Theory of Numbers—its Principal Branches.' **K. Hirayama.** 'L'origine des astéroïdes.' **E. Rignano.** 'L'aspect biologique du problème moral.' **T. N. Carver.** 'Les postulats nécessaires d'une politique de laisser-faire.' **J. K. Kochanowski.** 'La psychologie du peuple polonais par rapport aux problèmes politiques de l'Europe.' *Reviews.* *Review of Reviews.* July, 1922. **M. Boll.** 'Les étapes de l'absorption de la chimie par la physique.' **E. W. MacBride.** 'Vitalism.' [This is essentially a review of H. Driesch's Gifford Lectures on 'The Science and Philosophy of the Organism.' Pointing out at first that the presumed 'vital force' must leave a body at death, the author proceeds to examine what, if any, grounds exist for agreeing with Driesch. He concludes that the vital agent is not a 'force' like physical and chemical forces, for it is known that the total energy leaving the body in the form of heat and movement is approximately equal to the amount entering in the form of oxidisable food. The 'agent' must be a directive one only, combining the existing forces with a view to a definite result. Now all combinations of such forces rest on complications of structure, or the juxtaposition of substances unlike physically or chemically, or both. The human machine is in this respect very like an internal petrol combustion engine. Potential energy

is to be changed by the machine into kinetic energy for utilisation by the structure of the machine. Its use by wings, limbs and fins is examined in detail, and it is shown to be clearly possible to conceive an explanation of all adult activities in terms of physics and chemistry. Growth and reproduction constitute the real kernel of the problem, for the machine must build itself up. Weismann's germ plasm is no solution when tested by experiment. After a critical review of the bearing of many biological phenomena of the egg, and the regeneration of missing limbs, the author concludes with an admirable discussion of the real nature of a sane 'biological materialism.' **L. Bianchi.** 'La fonction musicale du cerveau et sa localisation.' **L. L. Price.** 'Le système capitaliste.' *Reviews.* *Review of Reviews.* August, 1922. **G. Armellini.** 'Petites planètes et satellites dans le système solaire.' **J. Drever.** 'The contributions of the various countries to the Science of Psychology.' **C. Fossey.** 'Les nouvelles provinces du domaine cunéiforme.' **T. E. Gregory.** 'Les problèmes des prix et du capital par rapport à la question de la socialisation.' *Reviews.* *Review of Reviews.*

INTERNATIONAL JOURNAL OF ETHICS. xxxii, 4. July, 1922. **Edward S. Ames.** "Religious Values and the Practical Absolute." [Regards religion as an active striving towards the realisation of felt values; traces development of social values from primitive times, showing how various goods have come to be so regarded; suggests that Christianity must identify herself with the highest values of modern democracy and science, of which the content and effect are only discovered by experiment; contrasts reflective balancing of alternatives with necessity for acting as if the end chosen had absolute value if action is to be effective, and shows function of science in presenting fullest data for practical choice.] **C. Delfile Burns.** "Domestic Effects of Foreign Investment." [Analyses social effects at home of investment abroad for private gain, states that the effect of government regulation of such investment in the interests of its own nationals is to separate nations, and shows difficulty of judging value of any policy in concrete situations.] **Rayna Raphaelson.** "The Hedonism of Disillusionment in the Younger Generation." [Gives considerable evidence in support of the view that the younger generation are dissatisfied with the present situation, and pleads that philosophers must restate the traditional goods or create new ones (1) in terms that are comprehensible to the modern citizen, and (2) in terms that interpret not the past but the present.] **Joseph Roy Geiger.** "The Honour System in Colleges." [Analyses defects of honour system in practice, suggests that sense of honour is relative to social environment, and that conditions in colleges must help each student to be his best self, otherwise the system is a mockery.] **Victor S. Yarros.** "Journalism, Ethics, and Common Sense." [Examines the newspaper problem—the quantity of irresponsible papers and the passivity of better ones—stating that the low morale of editors and owners, and dependence on advertisements are largely responsible; suggests that the only way to obtain reasonable accuracy, impartiality, fair dealing and efficient presentation of news and comments is democratic co-operation and temporarily endowed journalism.] **Stephen C. Pepper.** "The Boundaries of Society." [Maintains that 'the greater the power of society and the less the pressure of environment the larger the society and the more decentralised'; hence society expands and contracts; argues that morality is determined by the structure of society and that there is no moral standard beyond the boundaries of sovereignty in society, and that there being at present no social organisation superior to nations we are under no moral obligation to humanity.]

REVUE DE MÉTAPHYSIQUE ET DE MORALE. 29^e Année, No. 2. Avril-Juin, 1922. **R. B. Perry.** 'Le Réalisme Philosophique en Amérique.' [An excellently written summary, for French readers, more particularly of the "new realism" with the development of which Perry himself is chiefly identified. Apart from a concise sketch of the various types of idealism which dominated American philosophy in the last quarter of the last century, and apart, further, from a few brief indications of the differences between the "new" and the "critical" realists, Perry gives a synopsis mainly of his own realistic theory of knowledge, and, next, of his realistic theory of value in its applications to art, morals, politics, religion. For him, value is relative to "interest". In other words, all values depend, on the one hand, on the constitution of the physical world and, on the other, on the nature of man, and they may take the form of "ideals" to be realised by action transforming the given world. Hence, realistic morality is experimental and realistic religion is melioristic. And as the individual is the living focus of interests and actions, realism in politics is pluralistic and maintains the priority of the parts (the individuals) to the whole (the state).] **V. Delbos.** 'Les facteurs Kantiens de la philosophie allemande de la fin du xviie siècle et du commencement du xixe : vii. La méthode de démonstration chez Fichte ; viii. La méthode de démonstration chez Schelling.' [Another instalment of this careful and scholarly study of Kant's influence on his younger contemporaries and his immediate successors. After an eminently clear and accurate analysis of Fichte's dialectical method in the *Wissenschaftslehre*, Delbos contrasts Fichte's treatment of "synthesis" as a dynamic, creative activity of spirit with Kant's treatment of it as an organising by the intellect of the data of sense, and shows how Fichte is at least true to his principle that the method of philosophy cannot be borrowed from, or modelled on, the methods of any of the sciences. In dealing with Schelling, Delbos tries to show that Schelling owes his concept of method substantially to Fichte, but that with Schelling the method is no longer, as it was with Fichte, the moving and directing force of the whole system, but only a form into which it suited him to cast "the virtuosity of his metaphysical imagination".] **D. Parodi.** 'La Philosophie d'O. Hamelin.' [Hamelin, little known outside of France, in spite of two excellent books on Descartes and Aristotle, was the chief representative in recent French philosophy of the "neo-critical," i.e., neo-Kantian, movement originated by Renouvier. But Hamelin also came under the influence of Lachelier, a representative of the distinctively French movement of thought which passes from Maine de Biran and Ravaisson to Boutroux and Bergson. From Lachelier Hamelin learnt to look upon philosophy, not merely, with Renouvier, as the analysis of experience into its elements, *a priori* and *a posteriori*, but as a method of reflexion *a priori* for deducing, or constructing, in one act, both the conditions of existence and the conditions of thought. Thus Hamelin is a kind of French Hegel, with his own scheme of a dialectic of categories, as set forth in his principal work, *Éléments principaux de la Représentation*. After giving an outline of this dialectic, Parodi sets himself to meet M. Brunschvicg's criticisms of Hamelin, and finally asks the question, Has Hamelin succeeded in his enterprise? His answer amounts to saying that, if Hamelin has not succeeded in rationalising the whole universe, neither have his critics established the existence of factors in it which are in principle irrational. Thus, some such ideal as Hamelin's may yet be realised.] In the section headed 'Études Critiques' **R. Lenoir** offers a long and thoughtful review of Lévy-Bruhl's *La Mentalité Primitive*, dwelling especially on the preference of the primitive mind for "mystic," rather than "mechanical," causality, even when relying, apparently, on the latter, as in the use of

tools. Under 'Questions Pratiques,' **G. Cantecor** examines Bernard Lavergne's *Le Principe des Nationalités et les Guerres*. [He agrees with the conditions the fulfilment of which M. Lavergne demands before a people may rightly claim national independence and self-determination, and he bestows a similar benediction on M. Lavergne's treatment of colonisation. Colonisation is legitimate in principle, but it does not follow that every colonisation can actually be defended. Certain principles of equity and humanity must be observed, else colonisation becomes "usurpation and tyranny". We learn, incidentally, that the Jews of Algeria have been naturalised and received French political rights *en masse*, and that it is proposed to extend this policy to the Arabs of North Africa and to other colonial populations (no doubt in order to apply military conscription in the wake of French citizenship). To this policy both M. Lavergne and his critic are opposed; and they agree, further, that French colonials ought not to have the right to interfere, on the strength of their French citizenship, in the internal affairs of France. But M. Cantecor attacks M. Lavergne for wishing to give to the League of Nations the form of a supernational State, with a parliament in which all nations are to be represented in proportion to territory, population, wealth, etc., and the decisions of which are to be binding on all members of the League. M. Cantecor has little difficulty in showing that such a parliament, so far from being an impartial tribunal, would *ex hypothesi* be "packed" so as to favour the strong: it would be an organ of brute force disguised as an organ of justice and reason. It would not secure that supremacy of Right in international affairs which M. Lavergne desires.] Under 'Variétés,' **H. Gouhier** has an interesting historical note on 'Descartes à la Convention et aux Cinq-Cents.' [He gives an account of how the Convention, on 2nd October, 1793, resolved that Descartes' body should be transferred to the Panthéon, as that of a great man and a benefactor of the Republic, and how this resolution, which had not yet been carried out, was, on 7th May, 1796, annulled by the Committee of Five Hundred, as the result of a speech by one Louis Sebastian Mercier who maintained that the "long tyranny of the errors of Descartes had slowed down the onward march of reason".] **G. Renard** comments on B. Lavergne's recent article in the *Revue* on 'Insuffisances et Réformes de l'Administration Française,' and Lavergne replies to his critic. [The main point at issue is whether Lavergne has painted the state of the French administrative services too black.] *Nécrologie*: Alfred Espinas, 1844-1922. New books. Periodicals. 29^e Année, No. 3, Juillet-Septembre, 1922. **L. Brunschvicg**. 'La Philosophie d'Émile Boutroux' (pp. 261-284); 'L'œuvre de Pierre Boutroux' (pp. 285-288). [Émile Boutroux and his son, Pierre, died within a few months of each other, and M. Brunschvicg here reviews the work of both father and son. Under the influence of Zeller, whose *Philosophy of the Greeks* he translated into French, Émile Boutroux reawakened the interest of France in the history of philosophy. His own philosophy is summarised under the two headings of "Science and the Philosophy of Science," and "Dogmatic Rationalism and Reason". Under the former heading, Boutroux's famous doctrine of the Contingence of the Laws of Nature is shown to be a reaction equally against the influence of the Hegelian dialectic, then spreading among French thinkers, and against the exaggerated determinism popularised by Taine in the name of Science, and supported even by certain aspects of Comte's teaching. Boutroux rejects determinism as an *a priori* principle of reason, whilst accepting it for the limited range of facts for which it can empirically be shown to hold. Under the latter heading, M. Brunschvicg deals, first, with Boutroux's attitude towards Germany and German Philosophy, and, next, with his views on the Conflict of Science

and Religion. Boutroux rejected emphatically the Hegelian view, according to which evil is a necessary element in the world, so that even the scientific savagery of the late war might be justified as a means to a good end. But he never ceased to believe, against the "empire prussianised by Bismarck," in the essential Germany of Kant and Leibniz. In the Spring of 1914, lecturing at Berlin, he declared the German spirit, with its aspiration towards union with the whole, to be the necessary complement in the evolution of humanity to the French spirit with its emphasis on the individuality of the part. With the conflict of religion and science Boutroux deals by opposing to the abstract concepts the "human reality" of both. In concept, science and religion are mutually exclusive: each claims to be the whole truth. As human realities, as modes of spiritual activity, they may be harmonised, for the searcher after truth may also acknowledge moral and æsthetic ideals for the realisation of which he feels bound to strive. *La religion, pour être au-dessus de la loi, n'est pas contre la loi.* Christianity has enriched the human spirit by a morality of love and sacrifice. Pierre Boutroux had begun to make a name for himself at the Collège de France, and at Princeton, U.S.A., as a mathematician and, after his recent return to France, by scholarly studies in the History of Science (see, e.g., *Revue*, Vol. 28, No. 4.) **J. Hadamard.** 'Les principes du calcul des probabilités.' [A brief paper trying to show that the calculus of probability requires us to postulate only two primary and indefinable notions, viz. (1) that of an event which is very little probable (*très peu probable*), and (2) that of events perfectly equivalent (*parfaitement équivalents*). Thence, we get the axiom, which is evident *a priori*, that if events which are perfectly equivalent may occur in a very great number, any single one of them is very little probable.] **J. Lequyer.** 'Analyse de l'acte libre (publié par L. Dugas).' [Further extracts from Lequyer's MSS. remains; see also, *Revue*, Vol. 29, No. 1.] **R. Hubert.** 'Essai sur la systématisation du savoir scientifique.' [A long article by a disciple of O. Hamelin (see preceding number of the *Revue*), based on the principle that "in the relation (*rapport*) of subject to object consists at once the essence of thinking and the reality of being". From the dialectical development of this principle, by pure *a priori* construction, Hubert attempts to derive the complete systematisation of scientific knowledge. He begins with a rapid survey of attempts at such systematisation, from Plato and Aristotle to Descartes, Spencer, Comte, Renouvier, Ampère, and takes his stand finally on Hamelin's *Essai sur les Eléments principaux de la Représentation*. He then proceeds to his constructive task, first from the point of view of the subject, next from that of the object, but always on the principle that "every category is at once a degree of knowledge (*degré du savoir*) and a constitutive element of reality (*élément constitutif de la réalité*)". He tries to show how from the point of view of the subject a movement of dialectical synthesis, aiming ever at greater concreteness, carries thought from number *via* space and time to movement, and thence *via* quality and causality (in the sense of functional correlation) to finality and freedom in personal self-consciousness (*l'achèvement de l'être, et l'existence par soi et pour soi de la conscience personnelle*). He tries to overcome the difficulties which Hamelin found in the *a priori* construction of quality by the suggestion that "quality is, in its very nature, dialectical," that it has in it something of the essence of "pure activity," and that, therefore, its appearance in the world introduces an element of indetermination—an anticipation of what is ultimately apprehended in its true character as freedom. Science, Hubert holds, can from its very nature deal only with the past; hence, we must pass beyond the domain of science into a metaphysics of action, as Kant has shown. From the point of view of the object, the categories

are so many successive points of view for the ever fuller apprehension of reality. Natural phenomena are neither purely empirical data, nor pure constructions of thought. We find in them a "collaboration of that dialectical necessity and that creative contingency the higher synthesis of which constitutes the essence of active consciousness". (In this connexion, the author makes the interesting remark that Physics among the Ancients was based chiefly on the tactual, among the Moderns on the visual, qualities of things.) Phenomena can be arranged in four groups—cosmological, biological, sociological, psychological—the order of which forms a "progressive ascent towards freedom". Freedom is realised in varying degrees in all phenomena. Hubert concludes with a systematisation of the sciences, based on the fact that, apart from the categories of quantity, reality requires to be viewed from four successive points of view, which he calls, respectively (1) ontographic (descriptive of qualities), (2) ontogenetic (history of the transformations of an object), (3) ontotaxic (classificatory), and (4) ontonomic (causal). Thus, *e.g.*, "Sociology" will logically consist of Sociography, Sociogenetics, Sociotaxy, and Socionomy. All this is implied in regarding the categories, with the "neo-critical philosophy" (*i.e.*, with the French form of the "return to Kant," or, rather, to Hegel), not as empty forms, but as "vivifying and animating principles both of thought and reality".] **E. Gilson.** 'La Religion et la Foi par Henri Delacroix.' [A critical review of Delacroix's recent book on Religion and Faith.] **J. F. Renauld.** 'Note sur la théorie de la vérité et de la connaissance dans les "Problems of Philosophy" de M. Bertrand Russell.' [A clear exposition of Mr. Russell's theories of truth and knowledge in the *Problems*, followed by two criticisms, *viz.* (1) that Mr. Russell does not always succeed in distinguishing clearly between what we perceive and what we believe ourselves to be perceiving; (2) that in all knowledge of "existent" particulars there is involved a knowledge of "subsistent" universals, and that the latter sort of knowledge, if we test its implications experimentally, may supply a criterion of truth for our knowledge of the former.] *Nécrologie*: Prof. Charmont, of the Faculty of Law at Montpellier. New books (including a preliminary notice of Bergson's *Durée et Simultanéité*). Periodicals.

REVUE DE PHILOSOPHIE. May-June, 1922. **C. Lucas de Peslouan.** 'La théorie d'Einstein. Système cartésien.' [An admirably clear, sound, and at the same time, sympathetic criticism of the theory of Relativity, which really states the problems and distinguishes those elements of the theory which are proved from those which are not proved, and those which are logically sound from those which indicate confusion and self-contradiction. The supposition that relativity of measurement means relativity of knowledge is singled out as an assumption, and Einstein's treatment of the perturbations in the orbit of Mercury is acutely criticised. The criticism here follows the direction marked out by M. Painlevé in the Paris Congress and accuses the Einstein theory of unwarrantably using Newtonian mechanics, although the difficulty of doing otherwise is pointed out and fully admitted. The arguments for Einstein's theory of gravitation are very well stated. In the end the author professes a belief that Einstein's mathematical systematisation of the Universe, unlike the philosophical systematisations by Descartes or Leibnitz, has come to stay.] **Pedro Descogs.** 'La théorie de la Matière et de la Forme et ses fondements.' (5^e article.) [In this article the author begins to deal with the positive side of his discussion. His proof of the theory of matter and form consists of two complementary arguments from the generic properties of material bodies, which he classes as *static* and *dynamic*. The static argument is here developed, and is drawn from the nature of the *continuum*. The validity of the concept of *continuum* is taken as proved.

Hence it is laid down as a premiss that the ultimate concrete material body—the substance with its accidents, be it atom or electron or anything else—is a *unity*, and yet is continuously extended and therefore *divisible*. Now the distinction between actual unity and potential division is not a *real* distinction, but at least supposes a *real foundation* for the distinction. The actual unity requires a principle (a *sufficient reason*) which is *simple*; the potential multiplicity requires one which is *not simple*. These two principles are necessarily irreducible, and therefore really distinct—not indeed in the *physical order* but in the *metaphysical order*. The author argues with admirable precision. The objections answered are important and an aid to clearness. But the main difficulty—*viz.*: Is not the supposition of a real foundation a *petitio principii*?—is only fully to be answered by the second argument (dynamic, *i.e.*, from action and inertia), which will be developed in the next (and last) article.] **G. Voisine.** ‘Une figure de Spirituel, Mgr. Gay.’ [The first part of a study of the spiritual character of Mgr. Charles Gay, Bishop of Anthédon, and auxiliary to H. E. Cardinal Pie (1815-92). The study is occasioned by a biography by Dom Bernard du Boisrouvray, a Benedictine of Farnborough.] **Thomas Greenwood.** ‘Quelques livres de philosophie mathématique.’ [Notes on some more or less recent books and editions of older books on the theory and philosophy of mathematics.]

REVUE NÉO-SCOLASTIQUE DE PHILOSOPHIE. No. 94. May, 1922. **B. Landry.** ‘La notion d’Analogie chez saint Bonaventure.’ [God, according to Bonaventure, is not, as had been maintained under Arabian influence, the *intellectus agens*, but the light which illuminates the *intellectus agens*. The perfected activity of this active intellect would be the intuition of Being as one, perfect, and necessary, *i.e.*, the vision of God. This vision is never reached in this life; here we merely ascend the ladder of being from sensible knowledge of particular facts upwards. The progress is possible because (1) every lower stage in the ladder is an imperfect reflexion of the stage above—the familiar Neo-Platonic thought—and thus the contemplation of a lower stage, the imperfect, provokes us to attempt the contemplation of a higher, the more perfect; (2) but we should not be stimulated to ascend the ladder at all if the conception of the wholly perfect were not implicitly present to us at every moment, *i.e.*, if our own personality were not “analogous” with the personality of God. The idea of the perfect being is thus innate in us, and is the only innate idea, and it is innate precisely because “the action of God ‘as the light of the intellect’ translates itself in consciousness” as just this idea.] **D. Nys.** ‘N’y-a-t’il dans l’univers que des mouvements relatifs?’ [A defence of “absolute” motion. The main argument is that a change of the distance of *A* from *B* is a change of relation; the change requires a *fundamentum* in either *A* or *B*. Hence, since this *fundamentum* may lie in *A*, but not in *B*, there is such a thing as the “absolute” motion of *A*, though we cannot distinguish it from a relative motion. Obviously before this reasoning can be regarded as satisfactory, the whole doctrine of relations requires to be very carefully scrutinised. M. Nys assumes what Mr. Russell has called the “monistic” view of relations, but this is not the only possible view, and it has, at least, grave difficulties which M. Nys seems to ignore. The appeals to theology which follow do not seem to strengthen the absolutist case. *E.g.*, it is asked, if God annihilated all bodies but one, would it not be possible that this body should continue to move in the empty space left behind? But how do we know that there would be any empty space left behind after the annihilation of all the other bodies? Or if there were, how do we know that the one remaining body would continue to move? To argue that it must do so because the impulse to move implanted in it by God is in *it* and not in any of the

bodies which have been annihilated is simply to assume the "monistic" theory of relations. M. Nys apparently regards this difficulty as met by distinguishing between the "external" and "internal" place of a body. The "external" place is determined by relations to surrounding bodies; the "internal" place is the "portion of space really occupied by the volume of a body". The supposed solitary body in empty space would have an "internal" place, and if it were moving, there would be a continuous change of this internal place and this would be "absolute" motion. But it might be argued that the theory amounts to maintaining that the supposed body is changing its position relative to the various regions of empty space, and that "internal place" thus turns out to be a matter of relations to these regions, so that we are after all left with our old question about the soundness of the "monistic" theory of relations still on our hands. On the other side, if, as I think M. Nys means to maintain, the absolute motion of the supposed solitary body is not identical with change of position in empty space but is a transcendental and "metaphysical" *fundamentum* of such change, it might fairly be argued that apart from the fact that we are still committing ourselves to the "monistic" theory, such absolute motion is not relevant to the physical question at issue between, e.g., Descartes and Newton, while if the "monistic" theory of relations in general is unsound, the suggestion that omnipotence could set a solitary body moving may be on the same level as the suggestion that omnipotence could make a triangle with four sides.] **A. de Poorter.** 'Un Traité de Pédagogie Médiévale.' [An account, with extracts, of the *de modo addiscendi* of Guibert de Tournai, now in the Bibliothèque Nationale at Paris.] Review of Prof. Gilson's works *Le Thomisme* and *Études de philosophie médiévale* (by M. de Wulf) and of Prof. Alexander's *Space, Time and Deity* (by L. Noel). Notices of Books, etc. No. 95. August, 1922. **B. Landry.** 'L'analogie de proportion chez Saint Thomas.' [The object of the essay is to show that St. Thomas's theory of knowledge retains much more of the traditional Augustinianism than is commonly supposed.] **O. Lottin.** 'Les éléments de la moralité des actes chez St. Thomas d'Aquin.' [A full discussion of the balanced attitude taken up by St. Thomas to the doctrine of Abélard that the moral quality of an act is determined by its intention. Careful comparison of the teaching of the *Summa Theologiae* on the question with that of other works of the saint.] **R. Kremer.** 'Un nouvel essai de réalisme en Amérique.' [A brief exposition and criticism of *Essays in Critical Realism*.] **A. Pelzer.** 'Le cours inédit d'Albert le grand sur la morale à Nicomaque'. [It is known from the biography of St. Thomas that in his earlier days he had copied out and expanded a commentary on the *Ethics* delivered as lectures by Albert. The work, which had been supposed to have perished, has now been found to exist in manuscript. The author describes the extant manuscripts and the method of exposition adopted.] **W. Jacobs.** 'Le système des éléments.' [An account of recent speculation on the constitution of the atom. It is argued that the atom as conceived by Rutherford and others is an exact realisation of Aristotle's conception of an "entelechy".] Book reviews, etc. No. 96. December, 1922. **O. Lottin.** 'Les éléments de la moralité des actes chez Saint Thomas d'Aquin.' [Continued. The present instalment deals with the Thomist theory of conscience and particularly with the question how far an erroneous judgment of conscience obliges.] **J. Bittermieux.** 'L'absolu peut-il être relatif?' [A criticism of the Spencerian opposition of the absolute and the relative. There can be no real relation of the Absolute to anything outside itself, though there are real relations of finite things to the Absolute. Real relations may subsist within the Absolute itself, as is implied by the doctrine of the Trinity, but these relations can only become known to

us through revelation.] **B. Landry.** 'L'analogie de proportionalité chez Saint Thomas d'Aquin.' [The error of those who eliminate all Augustinian elements from Thomas is that they suppose him to have taught that only "analogy of proportionality" exists between God and creatures. This view, to which Scotus comes nearer than Thomas, leads to pure agnosticism. Thomas relies also on analogy of proportion, and the "obscure" idea of Being plays an all-important part in his theory of knowledge.] **N. Balthasar.** 'A propos d'un passage controversé du *De Unitate Intellectus* de Saint Thomas d'Aquin.' **A. Pelzer.** 'Le cours inédit d'Albert le grand sur la morale à Nicomaque. [Conclusion. Gives the text of the Prologue, Introduction and first chapter from four MSS.] Book reviews, etc.

LOGOS. Anno V. Fasc. 2. April-June, 1922. **P. Serini.** 'Emilio Boutroux.' [A sympathetic and finely written study of the development of B.'s thought as shown in the series of his published works.] **G. Della Valle.** 'La misura intensiva del Valore.' [A theory of Values requires that all values shall be comparable, and therefore that they shall be reducible to a common denominator. The author finds this common denominator in the "mental work" expended by the "normal individual" in producing or reproducing the value in question. (E.g., the intensity of an ethical value is to be measured by the amount of effort or sacrifice the "normal" man must expend to realise it.) The author does not answer two questions which have to be faced before a calculus of values becomes possible (a) who is the "normal" man? (b) and what is the unit of "mental work?"] **E. Di Carlo.** 'Teoria filosofica del diritto' (cont.). **A. Aliotta.** 'Il mio relativismo.' [We must distinguish the false relativism which leads to scepticism by implying that beyond our "relative" truths there is a realm of absolute but unknown truth from the true relativism according to which there is nothing but "relative" truth. All "points of view" are true, but all are not equally true, and knowledge, remaining always relative, is an endless progress from the less to the more true. It may be urged that this very distinction of less and more true presupposes the notion of a final and complete truth. Prof. Aliotta tries to turn the edge of this criticism, which I confess appears to me sound, by maintaining (a) that there can be no final truth because there is no one to know it, and (b) that without making the impossible attempt to discover an absolute and therefore inaccessible truth as a standard, we can judge of the degree of truth in our thought by its comprehensiveness and solidarity with the thought of others. This seems to me to amount to a purely arbitrary denial of the existence of God, plus a serious mistake in reasoning. The very question which of two proposed syntheses is the more harmonious and comprehensive is often itself one on which we have to decide. E.g., is the monism of Haeckel a more harmonious and comprehensive synthesis than the doctrine of St. Thomas? Or does Aliotta mean that we must wait until an end of history which never comes before the question can be decided? It seems to me that the contention that we must be acquainted with "absolute" truth before we can judge about degrees of approximation to it is sound, just as we must be acquainted with some method of extracting $\sqrt{2}$ correctly before we can compare the exactitude of different approximate values. And this does not really mean that we have to be acquainted with a truth which is by hypothesis beyond human knowledge. It only means that among the propositions we believe there must be some which are exactly true. Any proposition which is exactly true is "absolute" truth just as any performance of duty, however trifling, which is exactly right in the circumstance, e.g., the simple truthful answering of a question, is "absolutely" good. I could wish Aliotta would write in a rather less controversial

tone and not let the temptation to be rhetorical and a little self-conscious run away with him.] **B. Stumpo.** 'Sul significato del Prometeo di Eschilo.' [Prometheus is a symbol of the human mind in the long and painful ascent from less to more worthy conceptions of God. (This is, perhaps, not worse than some of the other "interpretations" of the drama. But is not the attempt to make it symbolise anything wrong in principle? There is no special problem about the poet's meaning when we remember that he was composing a drama and not a treatise of divinity, just as there is no *Hamlet-frage* when we remember that Shakespeare was not a psychiatrist or psycho-analyst.)] Abstracts of Papers. Reviews, etc. Fasc. 3-4. July-December, 1922. **B. Jakovenko.** 'Il cammino della Conoscenza filosofica.' [Philosophic knowledge transcends not only "sensitive" and "emotional," but also scientific knowledge. It combines the universality and necessity of science with the intuitive immediacy of sense; it is direct and assured intuition of what is precisely as it is. Philosophy begins with the *dubitatio de omnibus* but ends with this absolute certainty. How the transition is effected the writer does not explain, nor does he tell us much about the results reached by philosophy, except that a true philosophy is a very extreme pluralism.] **G. Rensi.** 'La volatilizzazione di Dio.' [The real and deadly enemy of religion is not science but the religious spirit, which, in its endeavour to free itself from unworthy anthropomorphism, transforms God into the All and so vapourises Him into nothing; "in the bosom of the divine abyss, the All and the Nothing become synonymous". The essay has all the writer's characteristic smartness, and all his superficiality.] **C. Ranzoli.** 'Il problema delle azioni a distanza.' [The distinction between action at a distance and action by contact is purely practical. Philosophically speaking, there is no action at a distance, since action implies spatial and temporal continuity. But neither is there action by contact, for "there is no centre of existence which is not penetrated and traversed by the elements of every other existence". The editor appends an *in memoriam* notice of Prof. Guastella on whose unfinished *Ragioni del Fenomenismo* the essay is based.] **P. Masson-Oursel.** 'Le positivisme mystique de l'Inde.' [Indian mysticism has affinities with positivism, and its history conforms to Comte's theory of the "three stages".] **G. della Valle.** 'Le antinomie della valutazione.' [Owing to the fundamental duality in unity of subject and object, all values, truth, beauty, goodness, give rise to an antinomy. Is an object true, beautiful or good because we value it, or do we value it because it has the value? The answer is that if we are thinking of empirical psychological fact, both sides of the antinomy are false. Not all that is true is believed, nor all that is believed true. Much is desired which is not good, and what is good may not be desired. But if we are speaking of "norms," there is an exact equivalence of the subjective and the objective. The true coincides with what ought to be believed, the good with what ought to be desired, the beautiful with what ought to give pleasure. It is important not to confuse this equivalence with a relation of cause and effect. Perhaps we may doubt whether any real light is thrown on the problems of logic, aesthetics and ethics by this transcription of them into the terminology of "Axiology". And I own to feeling a grave difficulty about the attempt to get in "existence" as a particular kind of cognitive value. The author himself recognises that his other values have all a positive and negative "sense," true-false, good-bad, beautiful-ugly. But existence, or value which he ascribes to the sense-experiences which the individual ought to have, appears to have no negative sense. We have no sensations of not-being. Does not this seem to show that the attempt to treat existence, in the sense in which he uses the

word, occurrence in space-time, as a value is wrong in principle?] **G. Epifanio.** 'Il sonno in psichiatria.' [The writer defends his own method of dealing with delirium and other mental disturbances by inducing an exceptionally prolonged sleep against that of hypnotic suggestion. The latter, acting on the "sub-conscious" from without, runs the risk of provoking artificial disturbances of personality; the former puts the patient into a situation favourable to the *vis medicatrix naturae*.] **C. Guastella.** 'La teoria di Einstein e il fenomenismo.' [A note on Einstein from a strictly phenomenalist point of view. The general theory of relativity is regarded as equivalent to the doctrine that time and space are objectively real, but position, distance, geometrical form, being "relative to the observer" are subjective. It is a simpler view that time and space, as well as their determinations, are subjective. If phenomenism has so far succeeded, we may expect that it will not be baffled by the displacement of the perihelion of Mercury. But is Einstein's language about the "observer" necessarily to be regarded as more than figurative? May not a clock or an atom be taken as the "observer" to whose "point of view" distance, etc., are said to be relative?] **P. Serini.** 'Bergson e lo spiritualismo francese del secolo xix.' [The first part of a full and careful study of the relation of Bergson's doctrines with the earlier French reaction against the *idéologues* and the eclecticism of Cousin. Deals with Maine de Biran and Ravaisson. Boutroux and Lachelier are to be treated in the sequel.] Notices. Book reviews [including one of McTaggart's *Nature of Existence*, vol. i].

RIVISTA DI FILOSOFIA NEO-SCOLASTICA. Anno xiv., Fasc. v. September-October, 1922. **M. Cordovani.** 'Filosofia della società.' [An inaugural lecture in a course on moral philosophy. Discusses the possibility of a general "science of society" and decides that such a study is possible as a branch of philosophy, though not as a positivistic science. Aristotle's *Politics* is really a treatise on sociology in this sense of the word.] **G. Semprini.** 'Il Commento alle Canzone di Amore del Benivieni di Pico della Mirandola.' [Deals with mediaeval Italian conceptions of "the beautiful" and love as determined by beauty. The main point is that the men of the Rinascimento, under the influence of Plato's *Symposium*, regard beauty as a means which leads us to knowledge and love of God.] **F. Olgiati.** 'Il Misticismo e la Metafisica dell'essere' (concl.). [Is there any real opposition in principle between the aspirations of the mystic and the teachings of metaphysics? Not in "heretical pseudo-mysticisms," for these are attempts to suppress one's personal individuality, and they are also regularly based on a "pantheistic" metaphysic which teaches that finite personality is an illusion. (I think the author assumes that an "heretical" mysticism will always be of this type a little too readily.) But the problem is suggested by orthodox Catholic mysticism. Is the immediate apprehension of God without the intervention of imagery or symbol claimed by the mystic incompatible with the "intellectualism" of St. Thomas's metaphysics? No, for there is no disagreement between the mystic and the metaphysician about the character of the object both apprehend, i.e., God. The only difference is in the mode of apprehension; the one apprehends directly what the other apprehends indirectly.] Bolletini. 'Spazio e Tempo.' [Remarks on the theory of relativity, which is regarded as an elegant and ingenious mathematical subtlety of no philosophical significance.] 'L'Intelletto Agente.' [Discussion of recent neo-scholastic work on the subject.] Reviews.

VIII.—NOTES.

PROF. JOACHIM'S *DE GENERATIONE*.

TO THE EDITOR OF "MIND".

DEAR SIR,

There are two errors in my review of Prof. Joachim's edition of the *De Generatione* (MIND, N.S. 125) which I should be glad of an opportunity to correct:

(1) *On de Generat.*, 333b. 1, I have fallen into an oversight. Mr. Joachim's account of the grammar of the passage is precisely the same as my own. I can only suppose that some illegibility in the copious notes I had made of his work misled me into ascribing to him a view which I find, on re-reading, he expressly repudiates.

(2) *de Generat.*, 336a. 2. On reconsideration, I suspect that Mr. Joachim is right about the meaning of *λίαν ὀργανικὰς* here. I believe we should both agree that in the paragraph under consideration two different criticisms are made on the physicists who are being condemned. (a) They forget to look for the real "efficient" causes of natural processes, and confine themselves to the consideration of certain mere "instrumental" causes (in Bacon's phrase *vehicula*), and (b) the "causes" they assign are, even as "instrumental," not on the level of such genuine *ὄργανα* as a saw or an axe. The only question is whether, in the rather confused paragraph, Aristotle first mentions (b), then diverges to (a), and finally reverts to (b) again, as Mr. Joachim assumes, or whether, as I had supposed, he begins with (a) and only introduces (b) at the end of the paragraph. I think it might be said for my own view that it is that which would naturally be suggested by the structure of the sentence *ἐν δὲ καὶ—αἰτίαν* (336a, 1-3). But on reconsideration I am inclined to think that the structure of the whole paragraph 336a, 1-12 is more favourable to Prof. Joachim's explanation. The sentence *φαίνεται δὲ καὶ τὸ πῦρ αὐτὸ κινούμενον καὶ πάσχον*, in particular, seems to require this interpretation. I can only plead in defence of my own mistake, if it is one, that I was careful to warn my reader that when I inclined to differ from Mr. Joachim I might very probably be wrong.

A. E. TAYLOR.

REALISM AND THE PHYSICAL WORLD.

TO THE EDITOR OF "MIND".

CHATEAU D'OEX,
SWITZERLAND.

SIR,

Mr. J. E. Turner has suggested to me that the meaning of the term "psychical," as used in my letter to the January MIND, is unusual and may be missed. Let me explain.

"The moon is a psychical event-complex." Well, the moon, as appearance within Divine Imagining is of one tissue with the other nature-contents of that Imagining and shares their general character. These contents are "psychical" in the sense that they exist *only in so far as they are imagined*; unsustained by their spiritual or psychical ground they would vanish and leave "not a rack behind". Existence, simultaneity, coexistence, succession, etc., all presuppose this creative imaginal ground.

Most emphatically the moon does not, "at the back of Beyond," consist *merely* of interrelated monads. Monadologies always fail us. Nay, ignoring monadologies, I may suggest that there is no obvious necessity why a "physical system" should be the seat of any finite sentients at all. Nature is an abstraction from a larger reality; from a great creative adventure within Divine Imagining. Within the adventure *may* arise innumerable finite sentients in the manner indicated in my book (*D.I.*, ch. ix., "The Evolution of Nature"). But this world-process, we must add, does not ask leave of the finite sentients either to precede them or to endure independently of them, if they disappear!

DOUGLAS FAWCETT.

MIND ASSOCIATION.

THE Annual Meeting of the Mind Association will be held this year at the University of Durham, at 5.30 p.m. on Friday, 13th July.

After the Meeting there will be held a Joint Session of the Aristotelian Society and the Mind Association, for which the following arrangements have been made:—

FRIDAY, 13TH JULY.

8 p.m. Inaugural Meeting of the Joint Session.

Address by Prof. F. B. Jevons. "The Philosophy of Theodore Merz."

SATURDAY, 14TH JULY.

10 a.m. Chairman: Prof. T. P. Nunn.

Symposium: "The Problem of Simultaneity." Prof. H. Wildon Carr, Dr. R. A. Sampson (Astronomer Royal of Scotland), Prof. A. N. Whitehead.

3 p.m. Chairman: Prof. Arthur Robinson.

Address by Monsieur Léon Brunschvicg, Professor of the Sorbonne. "La relation entre la mathématique et la physique."

8 p.m. Chairman:

Symposium: "The Relation of Psychology to Physiology." Dr. J. S. Haldane, Dr. E. S. Russell, Sir Leslie Mackenzie.

SUNDAY, 15TH JULY.

10 a.m. Chairman: Prof. S. Alexander.

Symposium: "Are the Characteristics of Particular Things Universal or Particular?" Dr. G. E. Moore, Prof. G. F. Stout, Prof. G. Dawes Hicks.

3 p.m. Chairman:

Symposium: "Is Neo-idealism Reducible to Solipsism?" Mr. C. E. M. Joad, Mr. C. A. Richardson, Dr. F. C. S. Schiller.

8 p.m. Chairman : Prof. J. A. Smith.

Symposium : "Can the New Idealism dispense with Mysticism?"

Mrs. Stuart Moore (Miss Evelyn Underhill), Mr. R. G. Collingwood, Dean W. R. Inge.

By the hospitality of the University of Durham, accommodation will be provided for men at Hatfield College, or if necessary in one of the other Colleges ; for women at St. Mary's College.

The inclusive charge for board and lodging from Friday afternoon till Monday morning will be 27s.

The charges for part-time accommodation will be : Bed and Breakfast, 6s. ; Luncheon, 2s. 6d. ; Tea, 6d. ; Dinner, 4s.

Meals will be served at Hatfield College as follows :—

Breakfast	8 to 9
Luncheon	1
Tea	5 to 5.30
Dinner	7 (Morning Dress).

The Addresses and the Symposia will be published by the Aristotelian Society in a Supplementary Volume. The volume will be printed and issued to Members before the Opening Meeting. The Papers of the Symposia will be taken as read, and the contributors will open the discussion in the order in which the Papers have been written.

There will be a registration charge of 10s., which will include the volume and all incidental expenses. The volume will be published by Williams & Norgate at 15s. net. Members of the Aristotelian Society or of the Mind Association, unable to attend the Joint Session, will have the privilege of purchasing the volume on the same terms, 10s., as those attending, by making payment in advance.

Members are requested to make application for accommodation as early as possible to

J. L. Burchnall, Esq., M.A.,
Bursar, Hatfield College,
Durham,

who has kindly consented to act as Honorary Local Secretary for the Joint Session. Applications should be accompanied by the registration charge of 10s.

ERRATUM.

In the last number of MIND, p. 93, line 19, for "Radhalerishnan" read "Radhakrishnan".

DEATH OF DR. BOSANQUET.

We deeply regret to announce the death of Dr. Bernard Bosanquet. An obituary notice will appear in our next number.

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